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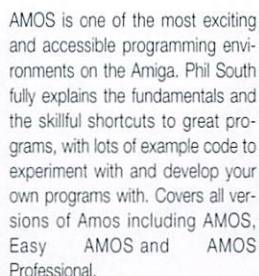
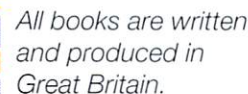
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Weather Forecast Part II
- ARexx Time and Date Functions
- Front Ending: Deluxe Music



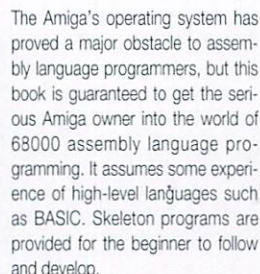
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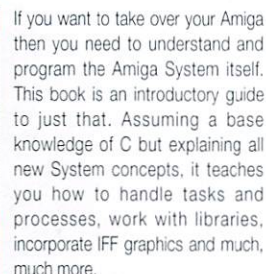
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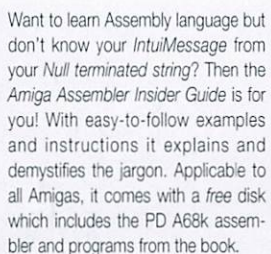
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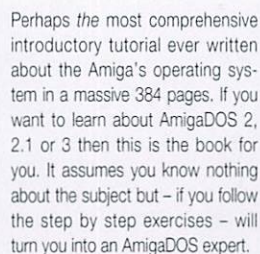
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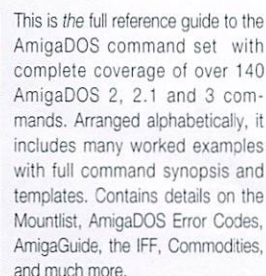
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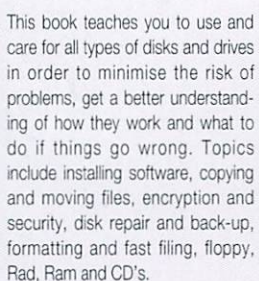
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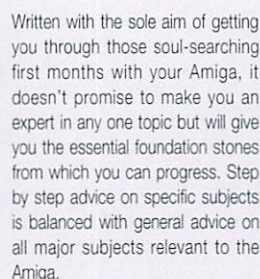
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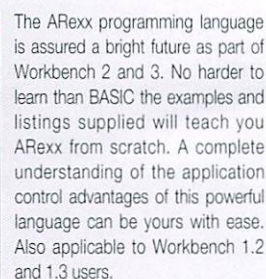
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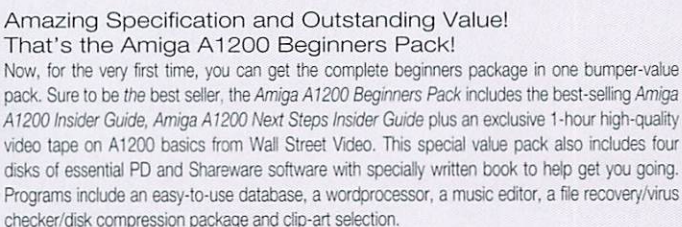
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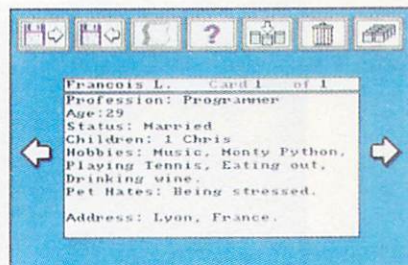
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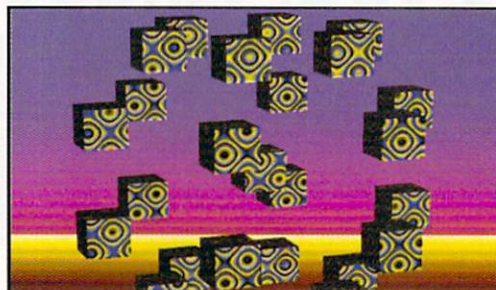


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And furthermore, p.64



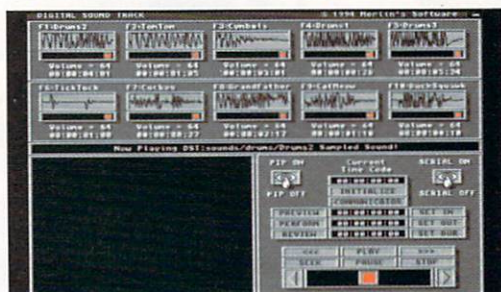
Aladdin-4D Tutorial #4 , p.14



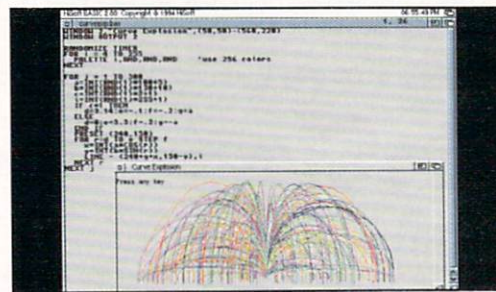
Digital Image Special FX PART XIII, p.22



Deathbead Vigil and Other Tales of Digital Angst, p.31



Digital Sound Track, p.34



HiSoft BASIC 2, p.17



Figure 1. 5-Day Forecast Screen

Figure 2. 5-Day Information Screen

Use HELM To Create An Animated Five-Day Weather Forecast, p.38



Diversions, p.49

CONTENTS

7 AC Questionnaire

Complete this questionnaire to let the new owners know what you think is important for the development and growth of the Amiga market.

8 NEW PRODUCTS and other neat stuff

Personal Paint v6.1, Studio Printer Version 2.0, Gage CS220 Driver, Fossil AGA, Strikes-N-Spares Pro, Fractal MusicLab, China Word, TranScript-German Audio Gallery-Indonesian, Online Bible Search 2.0 round out this month's new products.

14 Aladdin-4D Tutorial #11

by R. Shamms Mortier
Creating arrays with Genie Tools.

17 HiSoft BASIC 2

by Henning Vahlenkamp
A review of Oregon Research's new BASIC Development System for the Amiga.

20 Bug Bytes

by John Steiner
Using a PC mouse on the Amiga; Reason Install solutions; CRC errors; Modem compatibility and GPFax; Deskjet printer driver problems; and more on high density drives are among this month's topics.

22 Digital Image Special FX PART XIII

by William Frawley
Creating quick and easy, seamless Texture maps suitable for tiling onto 3D objects.

27 Roomers

From emulations to exclamations, the Amiga (and the world) continues.

31 Deathbed Vigil and Other Tales of Digital Angst

by Merrill Callaway
A review of the video *Deathbed Vigil and Other Tales of Digital Angst* by Dave Haynie.

34 Digital Sound Track

by R. Shamms Mortier
A review of Visual Inspiration's *Digital Sound Track* software package.

35 Beginning Assembly Part 2—Power Play

by Bill Nee
Create an Assembly Program and understand how it works.

38 Use HELM to create an Animated Five-Day Weather Forecast Part II

by Randy Finch
In this continuation of his article, Randy shows you how to make the quite tedious task of placing both high and low temperatures easier by using HELM.

44 Using ARexx Time and Date Functions

by Merrill Callaway
This month's programs make it easy to figure out all sorts of problems involving day of the week, time or dates.

49 Diversions

Shaq-Fu, Mortal Kombat II, Subwar 2050, Rise of the Robots, Disney's The Lion King, Superfrog, Super Stardust, Clockwiser, PGA Tour Golf and more in new CD32 and Amiga titles.

57 On Line

by Rob Hays
SCSI utilities that will make your life much easier, Scrammer an A3000/A4000 System information utility and information on local Amiga BBS systems.

59 Front Ending: Deluxe Music

by Randy Finch
This article discusses a *CanDo 2.51* program which makes use of CanDo's ability to open windows on Public Screens and its ARexx communication capabilities.

Departments

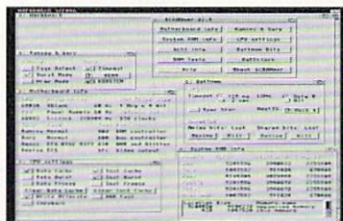
Editorial 6

Feedback 51

List of Advertisers 48



Using ARexx Time and Date Functions, p.44



On Line, p.57



Figure 1. Deluxe Music User Interface

Front Ending: Deluxe Music, p.59

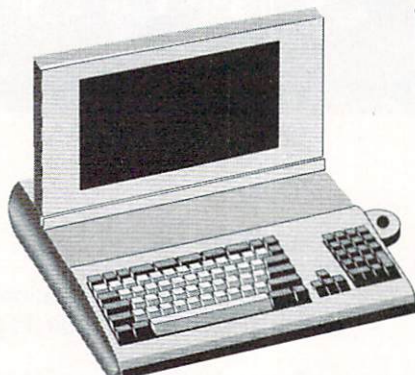
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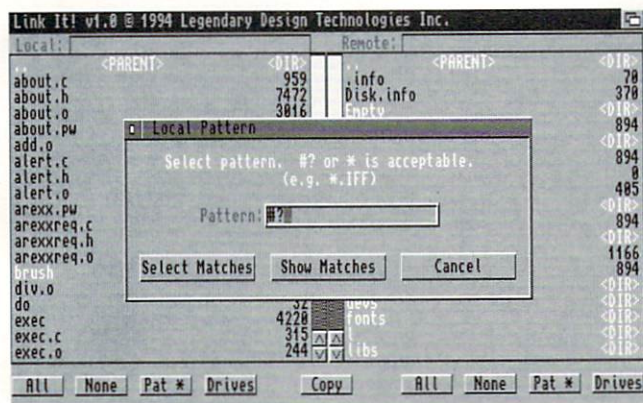
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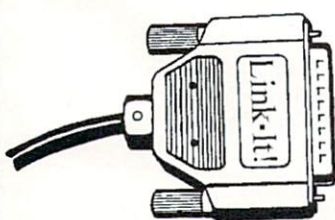
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18 Rents, royalties, partnerships	18	0.00	
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EDITORIAL CONTENT

Why is this magazine so late?

Happy Holidays?

This issue was originally our December issue when, way back in November, we received some especially hot inside information that the sale of Commodore was imminent. Since I believed my source, we held the issue back a few extra days for the final announcement. Except the announcement did not come.

No Room at the Inn

After our new, self-appointed deadline had passed, I drew in a breath, let out a sigh, and called my printer, "Sorry we are late. The films should be on your desk this coming Tuesday."

Quietly, came a softened version of my printer's rep's voice, "When you missed your date, we had to reschedule and I just discovered that you are not on the current schedule list."

There was no press time in November or December. In fact the first press time we could get was the second week of January. We had never had this problem before. Sure, we had missed dates, but, we had always been able to reschedule. With AC, we always try to get the latest news. This effort continually places us on the dangerous edge of any schedule.

Our rep continued, "The holidays always cause a problem because we lose the actual holidays and we cannot schedule our normal overtime. Also in December, we begin the catalogs for the mail order houses which mail by mid-January. With the postal increases coming January 1, all of the mail order catalogs have been pushed up and are already scheduled."

"Is that all?" I had a feeling it wasn't.

"No, most of the catalogs have increased their runs because of the increase in the economy. We also have increased ad pages in our other magazines."

I guess that last was the cruelest blow of all. While the rest of the industry was accelerating, the Amiga market was still on hold.

Another Imminent Sale

Today is the last chance I have of writing anything for this issue and whatever I write will be confined to this single page. It is Thursday, January 12. Last Tuesday, I spoke with Franklyn Wilson, the trustee in charge of selling the Amiga technology and the rest of Commodore's remaining assets. He told me that a sale would be announced relatively soon. He expressed regret that the sale had taken so long, but he restated that, when dealing with a multinational company like Commodore, it takes a great deal of time to satisfy all parties.

Since my talk with Mr. Wilson, I have spoken to Mr. Proudfoot (an associate of David Pleasance) in the UK and Mr. Amor at

CEI. Each has assured me that they have high expectations of winning the bid and producing Amigas. Yet, if either won the technology today, they would not be able to take possession until mid-February or even the first of March. No one has a clear status of inventories and responsibilities in the Philippines and elsewhere. Even if everything runs smoothly, it could take several more months before Amigas would once again be seen at a neighborhood dealer.

What To Do Until The Amiga Comes

In the depression of the 1930's, thousands of people lost everything they owned, no one could get work, and the economy ground to a halt. Some believe it was started by wildcat investments with no backing that eventually fell through and collapsed the stock market. However, the real tragedy of the depression was not how it began, but how it continued.

Even though some people had limited money, they held on to it. They would not invest. No one could take a chance. Things were too scary. If you spent a dime of cold-hard cash, you were likely never to see it again. It was best to wait until things got better before you spent your money.

I know I have oversimplified the problem, but people were frightened. They acted like rabbits caught in the middle of the road, at night, with a pair of headlights racing toward them. All they could do was stare back with their red gleaming eyes and wait. They were frozen by their own fears and held by their instinct.

Today's Amiga market is no better. At AC, we have seen a variety of new product announcements. Yet, when asked about advertising or promotion, most developers want to wait to see what happens to the Amiga before they invest their money. It doesn't matter that they have spent time and effort creating a product. They have decided to leave the fate of their product to the whims of the marketplace.

Anyone in the Amiga market knows how well this marketing plan works. Commodore used it for the past nine years to promote the Amiga. It did not work then and it will not work now. Yet, these developers will not assume it is their lack-luster attempt at promotion that killed their product, they will assume it is the Amiga market. Isn't this what Commodore executives believed about the North American market—they did not fund advertising or marketing, did not sell many Amigas, and then promptly reported that the North American market was not viable.

Let's be honest, the Amiga market is not all peaches and cream. There has not been an Amiga produced since April and it looks like there will not be any new machines for several months. This means no new users.

Current Amiga users are also becoming disenfranchised. They see low cost Pentium computers and 486 machines on the market which receive a huge amount of software and product support.

So, while Amiga users are being drawn away, Amiga developers seem to believe they should sit and wait. This is why Amazing has not released a new AC's GUIDE. After polling nearly every Amiga vendor, nearly 70% of them requested that we either not put any listing information in for them or severely edit their listing until after the Commodore sale. They want to know where the market is before they will commit.

Fighting Apathy

On the next page, is a questionnaire. This is our effort to get your ideas in writing so that we can forward them to the new buyer (or even the current bidders if these delays continue) so that they can have feedback from Amiga users on what they need, want, and expect from the new Amiga owners.

In addition, contact a few Amiga developers. Explain why you like their products and what you want to see from them in the future. You would be surprised what a few letters and well placed telephone calls could accomplish.

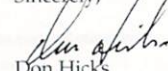
There is a lot more I want to say, but time and space are running short. We at AC will continue to bring you information and market coverage, but we will also need to adapt to the changing Amiga market and all of us must be aware of what that market is.

This issue is 64 pages, but I assure you it has more editorial on the Amiga than you will find elsewhere. Due to the current market, AC has had to adapt and change to a changing Amiga market. This is not a fact we are happy with and it is not something we are willing to accept. Our efforts remain to educate and motivate the Amiga market into action. Commodore never supplied leadership, now is the time we need to rely on each other in order to successfully support the Amiga market—no matter where that market is currently or where it is going.

Stop The Presses?

Now, since I have heard from several sources that the sale should happen by Friday, should I wait and hold this issue? No, I don't think so.

Sincerely,


Don Hicks
Managing Editor

Amiga Owners—Be Counted!

Complete this questionnaire so that we can demonstrate to the new owners just who is in the Amiga community. Please take a moment to complete the essay portion (with additional pages if necessary) and tell us the things you do and want to do with your Amiga:

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Name _____

Address _____

City _____ State _____ ZIP _____

Country _____

Unless otherwise noted, please check all boxes that apply.

1. Do you own an Amiga? ☐ Yes ☐ No
2. Are you planning to purchase an Amiga?
☐ Very Soon ☐ In 3 months ☐ In 3 to 6 months
☐ In 6 to 9 months ☐ Whenever they come.
3. What interested you in the Amiga
☐ Price ☐ Available Applications
☐ Graphics ☐ Friends
☐ Sound ☐ Amazing Computing
☐ Advertising? ☐ Other _____
4. How many hours do you use your Amiga each week?
☐ Over 15 ☐ 10 to 15 ☐ 5 to 10 ☐ Less than 5
5. Which members of your household use the Amiga?
 Females: ☐ Under 3 ☐ 3 to 8 ☐ 9 to 13 ☐ 14 to 17 ☐ 18 to 25 ☐ 26 to 35 ☐ 36 to 45 ☐ 46 to 55 ☐ 56 to 65 ☐ Over 66
 Male: ☐ Under 3 ☐ 3 to 8 ☐ 9 to 13 ☐ 14 to 17 ☐ 18 to 25 ☐ 26 to 35 ☐ 36 to 45 ☐ 46 to 55 ☐ 56 to 65 ☐ Over 66
6. What software for the Amiga do you currently use?
☐ Education ☐ DeskTop Pub. ☐ Games
☐ OnLine ☐ Graphics ☐ Music
☐ Business ☐ Other _____
7. What would you like to see for the Amiga ?
☐ Education ☐ DeskTop Pub. ☐ Games
☐ OnLine ☐ Graphics ☐ Music
☐ Business ☐ Other _____
8. What types of the Amiga applications will you probably purchase in the next 3 to 6 months?
☐ Education ☐ DeskTop Pub. ☐ Games
☐ OnLine ☐ Graphics ☐ Music
☐ Business ☐ Other _____
9. How much did you spend on your Amiga in 1994?

10. How much will you spend on your Amiga in the next 6 months?

11. How much will you spend on your Amiga in the next year?

Please use extra sheets for questions 12-14 & 18 if necessary.

12. What do you like most about the Amiga?

13. What do you like least about the Amiga?

14. Does a program's review influence your purchase ?
☐ Yes Why? _____
☐ No Why Not? _____
15. What would you like to see most in AC?
 (List your choices by number in the boxes with 1 being first.)
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☐ Opinion ☐ Other _____
16. How do you normally purchase magazines:
☐ By Subscription ☐ Book Stores ☐ Newsstands
17. What other kinds of magazines do you read?
☐ Business ☐ Computer ☐ News
☐ Science ☐ Hobby ☐ Other _____
18. Does AC's Guide interest you?
☐ Yes Why? _____
☐ No Why Not? _____
19. Which other kind of computers (if any) does your family have?
☐ IBM PC (or clone) ☐ Macintosh ☐ Apple
☐ C64 ☐ Atari ☐ Other _____
20. What On-Line services does your Family Subscribe to?
☐ CompuServe ☐ Genie ☐ America OnLine ☐ Portal
☐ Prodigy ☐ BIX ☐ Other _____
21. Tell the new Amiga patent owners what you think.
 Please use these few lines below as well as any extra pages you need, to state list your views. Are there any special applications you are interested in seeing developed for the Amiga or are there any special interests of yours that you would like to see explored in *Amazing Computing*. AC is your forum, please use it to let your feelings be known.

NEW PRODUCTS

and other neat stuff

Personal Paint v6.1

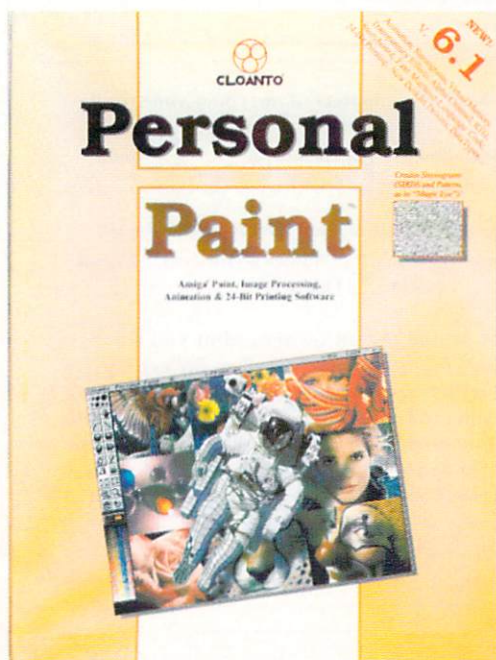
Personal Paint is a powerful and intuitive paint and image processing package which takes full advantage of all generations of Amiga computers and their operating systems, accelerator cards (including FPU and cache-RAM) and graphics boards (Display Database and Blitter compatible). It offers image processing functions which include: programmable effects (like emboss, sharpen, blur etc.), "intelligent" color reduction and remapping, palette merge, different file formats (IFF, PCX, GIF, encrypted C source code etc.) Also included are up to nine brushes, two different working environments, text editor, color fonts, Amiga Clipboard (for text images), PostScript driver (with data compression, color printing and

separation), customizable user interface with stereo sound effects, screen grabber... plus a disk with 256-color images for all Amiga models. Personal Paint is distributed in the US by DKB. The list price of v6.1 is \$99. DKB Software, 50240 West Pontiac Trail, Wixom, MI 48393, (313) 960-8751. Inquiry #204

Studio Printer Version 2.0 Release

Studio Printer Version 2.0 is a powerful set of printer drivers for the Amiga. Version 2.0 will feature full driver support for all major printers, an improved user interface, and improved Workbench printer drivers. Along with the HP and Epson emulation drivers, new drivers for the Canon BJC, Canon BJ, and Epson Stylus printers has been added. The main new feature is the first Color Management System (CMS) on the Amiga. This system allows users to print colors matching the screen colors. If required, the system can be easily calibrated using a scanner, or by hand. After adjusting the system to your monitor and printer, colors or greyscales are printed matching the screen colors as close as possible.

Personal Paint, distributed in the US by DKB Software, provides powerful tools for image processing needs.



Studio Version 2.0 picture printing application now supports IFF ILBM, IFF DEEP, JPEG, GIF, TARGA, PGM, PPM, and OS 3.0 Data type images. Suggested List Price is \$99. Contact your local Amiga dealer, favorite mail order company, or Noahji's to purchase Studio. There will be a special upgrade price of \$39 for all currently registered owners of Studio offered directly from Noahji's. Noahji's, 3591 Nyland Way, Lafayette, CO 80026, Tel: 303-499-1975, Fax 303-499-1979. Inquiry #205

dataTAX U.S.A. Gets New Publisher

Legendary Design Technologies has announced that they are the new publisher of the dataTAX tax preparation software for the Amiga. This product was formerly known as TaxBreak from Oxxi. Not only will Legendary be producing and updating the tax forms each year, but they have also made several improvements to the program. dataTAX now conforms better to the 2.x/3.x standard, has more printing options and is faster and more accurate than ever. Previous owners of any version of either dataTAX or TaxBreak will be eligible to receive the 1994 version for \$29.95. Customers should direct their inquiries to the appropriate office.

In the US: Legendary Design Technologies Inc., PO Box 1147, Lewiston, NY 14092-8147. In Canada: Legendary Design Technologies Inc., 25 Frontenac Avenue, Brantford, ON N3R 3B7. Inquiry #206

Gage CS220 Driver

An Exec device driver for the Gage CS220 digital oscilloscope, it supplies full access to all configurable parameters such as coupling, sampling rate, trigger modes, etc. Includes autodocs on disk and in printed form. A DataWeb module that interfaces to this driver is available. Contact Endicor for a demo disk or information on availability of drivers for other Gage models. It requires Workbench 2.04 or later, "GoldenGate II" or "GG2 Bus +" Zorro-II to ISA bus Bridge, and a CompuScope CS220 digital oscilloscope from Gage Scientific. SRP is \$99.00.

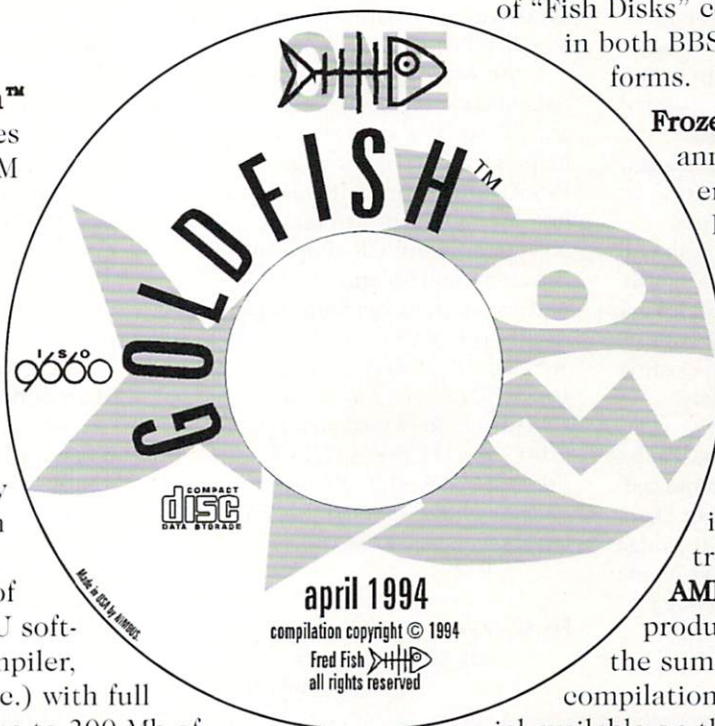
Endicor Technologies, Inc., PO Box 29000 #355, San Antonio, TX 78229, Tel: 210-650-4988. Inquiry #207

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GoldFish, a two-disc CD-ROM set, contains the entire original 1,000 floppy-disk library created by ALS founder Fred Fish. This compilation of "Fish Disks" contains the entire library in both BBS ready and ready-to-run forms.

FrozenFish, offered on a bi-annual basis, contains the entire 1,000 floppy "Fish Disk" library in BBS ready (archived) form only. Also included are over 200 Mb of material from previously released FreshFish discs.

NEW RELEASE: ALS is happy to announce that it is now an authorized distributor of the "new" **AMINET™** CD's. These CD's, produced quarterly starting in the summer of 1994, are archived compilations of the most recent material available on the Internet. Each disc will contain thousands of programs, demos, sound files, games, images, programming tools, etc.

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NEW PRODUCTS

and other neat stuff

Soft-Logik Announces the Availability of Wordworth and Datastore!

Soft-Logik has announced an exclusive licensing agreement with Digita International that will bring Digita's acclaimed Wordworth, word processor and new Datastore, database manager to the US and Canada.

Digita International is the leading publisher of Amiga productivity software in the United Kingdom. Under this agreement, Soft-Logik will now market and support Wordworth and Datastore in the United States and Canada. Technical support options will also be made available to existing users of these programs in North America.

"The American Amiga market has undergone a lot of changes in the last year," said Soft-Logik president Deron Kazmaier. "It is important that Amiga users in the United States and Canada have access to the very best Amiga word processor and database pro-

grams. We will give Amiga users that access."

Wordworth 3.1 is the latest version of Digita's award-winning processor. It includes advanced online help tutorials, intuitive editing, amazing text effects, and supports PostScript, TrueType and Compugraphic fonts. Its real-time spell checking, drag and drop editing, tables, built-in printer font support and enhanced PostScript printing make it the best choice for all Amiga word processing. Wordworth is available immediately from Soft-Logik at a direct price of \$135.

Datastore is a new personal database manager. It comes with Easy Start Templates and extensive online help. It features mail-merge with Wordworth, forms with text and graphics, sophisticated queries and a Navigator with VCR-style controls. Datastore will become available in mid-December from Soft-Logik at a direct price of \$95.

Soft-Logik Publishing Corporation, PO Box 3838, Ballwin, MO 63022-3838, Sales (314) 256-9595 or (800) 829-8608, Tech (314) 256-9333, FAX (314) 256-7773, BBS, (314) 256-8971. *Please note these are new phone numbers and a new address. Inquiry #208*

Fossil AGA

Fossil AGA is a multimedia paleontology/dinosaur discovery system. It covers a wide range of topics including the scientific names of dinosaurs, bone structures, important paleontologists in history, and many other interesting facts. It is complete with 256 color graphics, digitized sounds, and factually accurate information. Also, Fossil AGA can be

Soft-Logik's exclusive licensing agreement will provide Wordworth and new Datastore to the North American Amiga user.

used to generate instant reports on each dinosaur type. It requires an A1200 or A4000 with hard drive and has an SRP of \$24.95.

Christopher C Meeker, RR #4 Box 223, Oswego, NY 13126. *Inquiry #209*

Macros for Lightwave 3D Modeler

MacroForm is a set of 10 powerful modeling macros for Lightwave 3D. Performing modifications on existing data, MacroForm provides excellent tools for morph and organic object creation. With tools like ExoForm which allows for "digital clay" modeling; Combine_Curve which will combine curve data from 2 curves to create one; and RailForm & Rubberize which allow you to do object distortions, MacroForm has tools to satisfy the artist, industrial designer, and 3D producer alike.

OAO Software, PO Box 218, Vauxhall, NJ 07088-0218, Tel: 908-964-4546. *Inquiry #210*

"New School Sighted"

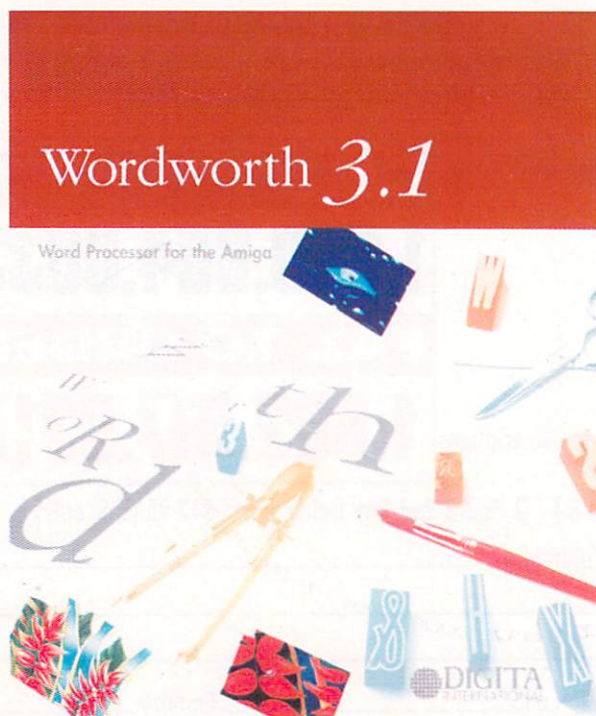
Fred Fish and Amiga Library Services has announced an addition to their rapidly expanding product line. "LIGHT-ROM" is a CD-ROM exclusively for Lightwave artists containing over 600 megabytes of: Lightwave objects and exclusive scene files, Thumbnail renderings for easy previewing, "Showcase" Directory-a unique stage for Lightwave artists, and a Bonus selection of over 100MB of Imagine objects & text. SRP is \$39.95 and may be purchased from your local Amiga retailer or by contacting Amiga Library Services.

Amiga Library Services, 610 N Alma School Road, Suite 18, Chandler, AZ 85224-3687, Tel: 1-800-804-0833, Fax: 602-491-0048. *Inquiry #211*

Strikes-N-Spares Pro

This upgrade to Strikes-N Spares takes all the great features of the original and adds Computer Bowlers, more animation, sound effects, modem play, increased database information, save settings option, choice of ball color and much more. SRP is \$49.95, for registered users the upgrade is \$14.95.

Beyond Entertainment, PO Box 81, Glendale, AZ 85311-0081, Tel 1-800-887-9775. *Inquiry #212*



New! TERMITE®

Amiga Telecommunications enters the 90's!

Finally, everything you need to start cruising the Information Super Highway in one easy to use package.

Termite is so easy to use even a novice telecommunicator will feel at home, yet it has all of the power and high end features to satisfy the most seasoned modem warrior.

- Designed from the ground up at Oregon Research to take full advantage of Amiga WB 2.0 and higher!
- 100% Amiga Style Guide compliant!
- Supports communication speeds from 300 to 115,200 BPS!

- Flexible Phone Book with unique configurations for each number
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- Configurable review buffer with cut and paste editing
- Multi-tasking chat window to prepare text before sending it. Great for real-time conferences.

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- Font and Screen sensitive

- Configurable button bar! Assign any program function/macro to the button bar. Want your own icons? No problem, just assign your own IFF brush to the button!

- Fully ARexx programmable for full automation!
- Automatic Script writer. Turn on script recording and have Termite write your ARexx scripts for you!

- Automatic Call logging. Know where you were, when you were there, and how much you spent

- Supports Amiga standard XPR libraries giving you a wide range of transfer protocols including Xmodem, Ymodem, Zmodem, Kermit, CompuServe B+, etc.

- Supports Amiga standard XEM external terminal emulations in addition to the built in ANSI and VT102 terminal emulations. Support for RIP XEM.



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Tired of the limitations of those "BASIC" game development systems??

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Over three years in development, the GameSmith Development system gives you the low level power to create the masterpiece of your dreams. The package has over 350 pages of documentation fully describing the system, utility functions, and over 130 library functions complete with a detailed tutorial and many examples with source.

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- Automatic Virtual Space object handling
- Dynamic Animation Control

- Build up your animations graphically in the interactive character animator CITAS.

Customize all aspects of the object including sequence, placement, speed, display method & priority, object collision detection parameters. Save everything out as a single object addressable by the system! It's **Easy!!**



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- Fully AGA compatible
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The perfect solution for shoot 'em ups to graphic adventures. Don't let the limitations of yesterday keep you from forging the masterpiece of tomorrow!

Buy GameSmith today!

New! ON THE BALL®

Personal Information Manager

Your Amiga is a powerful ally in the quest for increased productivity. On The Ball allows you to take control of your busy schedule and information so you always accomplish your goals. The *emphasis* is on *ease of use* and the timesaving features that actually let you organize your life! Calendar and Appointment Manager, Address Book and Contact Manager, To Do list, and FreeForm Notepad. Get **On The Ball!**



- View and print configurable appointment schedules from day, week, month, or year
- 11 repeat modes to schedule appointments
- Configurable reminders with "snooze"
- Flexible appointment search capabilities
- Iconifies to a convenient monthly calendar
- Reminders can launch ARexx scripts, programs
- Automatically delete old appointments
- Contact Management. Dialer/Auto redialer.
- Convenient Rolodex layout for locating addresses. Sort and search by any field

- Load and save notes with the handy built in Text editor complete with cut/copy/paste, search and replace, copy to clipboard.
- Attach notes to calendar, appointment, to-do list or addressbook. Auto date/time stamp
- Create your own labels (e.g. Personal, Business, Birthdays, etc.) to categorize and organize
- Extensive ARexx support for script control
- Customize all screens & views
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New! SQUIRREL SCSI®

Finally, a plug and play SCSI 2 solution for your A1200 and A600!

Named for the famous storage hungry animal, the Squirrel SCSI interface simply plugs into your PCMCIA port. This instantly opens up a whole new world of possibilities! Attach up to 7 different devices including: Hard Disks, Tape Drives, Syquest, Floptical, and any SCSI CD-ROM drive including 3 and 4x drives

Completely compatible with any SCSI 1 or SCSI 2 device, Squirrel SCSI achieves a transfer rate >1.2Mb/sec on a stock A1200 and >3 Mb/sec on a 68030 accelerated A1200.

Drivers are all CD32 compatible so you can run your favorite CD32 titles like Diggers, Brutal Football, Liberation, etc.

Squirrel comes complete with SCSI software drivers and a host of utility programs including an audio CD player, a CD to HD sampler, and easy to use SCSI formatting and partitioning.



New! TWIST 2® The Friendly Relational Database

Graphically create your databases and reports with the easy to use, uncluttered user interface. Twist is the perfect database for your CD collection to a full double entry business accounting system. And it's fully relational and FAST!!!

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Also from Oregon Research ... **Devpac 3**, **HiSoft BASIC 2**, and **HighSpeed PASCAL** - professional language development systems. **MegaloSound**, **Aura**, and **Clarity 16** - Direct to disk audio samplers, editors, and playback. **VideoMaster A500** and **AGA Color Video/Audio Digitizer & Sequencer** outputs ANIM5's, electronic color splitter available. Call, write, e-mail, or FAX for more information: Oregon Research 16200 S.W. Pacific Hwy., Suite 162 Tigard, OR 97224 PH: (503) 620-4919 FAX: (503) 624-2940 Internet: orres@teleport.com Genie: ORA CompuServe: 71333,2655

NEW PRODUCTS

and other neat stuff

Fractal MusicLab

Fractal MusicLab is a 16 channel music composition product that produces unique musical structures and organization that you can use for composing original music sequences. It can either generate musical structures internally utilizing Iterated Function Systems, or extract musical structure from externally created fractal ILBM images. Numerous options exist for applying the musical structures. The program includes an easy-to-use IFS Code editor for internally producing an infinite number of fractal structures, and an extensive graphic music editor supporting all MIDI event types. The program supports both IFF SMUS and MIDI music file formats for compatibility with most professional sequencers and multimedia authoring programs. SRP is \$99 and it requires an Amiga with 2MB RAM and AmigaDOS 1.3/2.0.

Digital Expressions Research, W6400 Firelane 8, Menasha, WI 54952, Tel: 414-733-6863. Inquiry #213

Three new products from Fairbrothers, Inc.

China Word

This title is for integrated Chinese/English word processing. Uses Pinyin input method for Chinese characters. 3700 traditional Chinese characters are available. Integrated text environment with ProWrite 3.3 or higher. SRP of \$99.95 and an availability date of February of 1995. The system requirements include 2MB Ram, with AmigaDOS 2.0 or higher.

TranScript - German

This title offers German to English translation. Input German text or word-processing document and get an editable output in English text. It works with ASCII text and translates

words, phrases and sentences. Provides gender, number, case, tense and person agreement. It improves word order and quickly finds translations for individual words. The dictionary can be edited for new words and revisions. SRP is \$99.95 with a release date of February 1995. System requirements include 2MB Ram and AmigaDOS 2.0 or higher.

Audio Gallery - Indonesian

Audio Gallery Indonesian is a talking picture dictionary which teaches you beginning, spoken, and written Indonesian. It includes 30 colorful scenes such as animals, alphabet, kitchen, places, weather, etc., combined with over 800 digitized vocabulary words and phrases. This eight disk set presents Indonesian and English translations. A dictionary and self-help quizzes are also included. SRP is \$69.95, also with a February 1995 release date.

Fairbrothers, Inc., 5054 S 22nd St, Arlington, VA 22206, Tel: 703-820-1954, FAX: 703-391-2164. Inquiry #214

The New Online Bible Search 2.0

Version 2.0 of the Online Bible Search has been released. This title instantly finds any word or phrase in the Bible with output to screen, printer or disk. You can add your own notes, topics and word definitions. The program is menu driven with context sensitive help screens throughout. It requires at least one Text Module which must be installed on a Hard Disk. Optional Online Bible Search modules include: Greek/Hebrew Lexicon; 635,000 cross references; 5000+ topics including Thompson's and New Topical Bible; various Verse Notes and more on one CD-ROM disk. Special Online Bible Paks include an Install disk, printed Users Guide, Text Module, Greek/Hebrew Lexicon, 5000 Topics, and Treasury of Scripture Knowledge disks.

Paks cost \$75 - \$100 and requires 14-22 megabytes of disk space. Online Bible Search Text modules cost \$40 - \$65 and includes text disks and a 120 page printed Users Guide. Optional Add-On Online Bible modules cost \$8 - \$24 each.

SOGWAP software, 115 Road, Decatur, IN 46733, Tel: 219-724-3900. Inquiry #215

Oregon Research Acquires Pure Logic Software

Oregon Research is pleased to announce the acquisition of Pure Logic Software. Pure Logic's title On the Ball will continue to be sold and supported by Oregon Research. All existing Pure Logic customers will receive notification on how to obtain product support from Oregon. If you have recently purchased a Pure Logic Software product, but have not yet registered, please send the registration to Oregon Research.

The current version of On the Ball is V 1.50 and it includes many new features and additions such as file import/export support for Legendary Design Technologies' program Address It! The latest version can be obtained from Oregon Research by returning your original program disk and \$5 for postage and handling.

Oregon Research is dedicated to the development of high quality Amiga software. They promise continued product support and development of On the Ball. Oregon Research is actively upgrading and improving the product and expects to release a major new version early in 1995. For more information or a copy of detailed product literature contact: Oregon Research, 16200 SW Pacific Hwy Ste. 162, Tigard, OR 97224, Tel (503) 620-4919, FAX (503) 624-2940. Inquiry #219

•AC•

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653-BIBLE SEARCH #3
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711-BIRDS AND MAMMALS
719-ASTRONOMY
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Creating arrays with Genie Tools

by *Shamms Mortier*

Shead's tools have exactly the same look and feel as the original A4D set, and are just as qualitatively useful and intuitive. All are accompanied by a wealth of on-line explanatory text, and even tutorials for the intuitively disadvantaged.

Many years ago, for those of you who are too Amiga-young to remember, there was a 3D program, distributed by a company called MindWare, called PageRender-3D. Though somewhat primitive by today's standards, PageRender had a few tools that nobody else had. One of these, and my absolute favorite, was the ability to create what are called "arrays".

Arrays are groupings of a cloned object formed in a specific pattern, such as cubic, spherical, cylindrical, and other 3D possibilities. By various methods, some too complex to be inviting, you can create arrays in all of today's Amiga graphic programs. And now, with the superlative list of accessories for ADSPEC's Aladdin-4D software called "Genie Tools: volume 2" from Shead data processing, the intuitive magic of array creation is again easy and enjoyable with a tool called "Point Instancing".

Traditional Aladdin Instancing

We've already covered the general way that Aladdin addresses instancing an object in tutorial number nine in *Amazing*, so we won't bother to go through the whole process here. Suffice to redefine the instancing process as a way to tell the computer that a polygon or 3D object that has been selected can be cloned (repeated) any number of times along a defined path.

In A4D's normative instancing process, the selected poly or object never shows its duplicates on the editing screen, but only appears when rendered. This is meant to save space when the 3D file is saved, because all that is stored are the directions and not the polygons. This is fine when you want to animate a number of objects following a path at the same time, like similar marchers in a large parade. It does little good, however, when you want to wind a path through the objects with a flying camera, or have another reason for needing to see the duplicated objects on the edit screen. Normally, except for wireframe previewing, instanced objects do not appear until rendered. Shead's Genie Tools ride to the rescue.

Genie Tools

Let me back up for a second and say a bit about Shead's genie Tools in general. Ever since Greg Gorby, the author of Aladdin-4D, opened up his program to other programmer's in version 3.0, there have been a number of folks who have written their own tools. Usually these tools have addressed processes that A4D was missing, and in rare cases the new tools have lived up to the high standard Greg Gorby set in

the root program. Genie Tools was an exemplary member of this process from the start. All of the added tools in volume one, and now in volume two as well, not only added some new operations, but Mr. Shead seems to have captured the very essence of what ADSPEC has done in Aladdin itself.

Shead's tools have exactly the same look and feel as the original A4D set, and are just as qualitatively useful and intuitive. All are accompanied by a wealth of on-line explanatory text, and even tutorials for the intuitively disadvantaged. Point-Instancing, one of a whole collection of new tools in volume two, is the tool being referenced in this tutorial. As we continue this series of A4D tutorials in future issues of *Amazing*, I'm sure selected Genie Tools will continue to be a frequent subject of attention.

Point-Instancing

Unlike their A4D standard counterpart (called simply "instancing"), point-instanced objects appear on the edit screen for path allocation and whatever other editing you may want to apply to them (resizing, rotation, deletion of selected members, etc.). Once objects are point-instanced (meaning duplicated in specific arrays on the edit screen), it's a fairly simple task to thread a path in between them and fly the "camera" along it for the animated ride of a lifetime. Given the right recording equipment, these types of animations rival the hottest stuff seen on the networks. One of my present projects consists of flying a detailed spaceship into and through a cubic array of textured revolving spheres.

The Varieties of Point-Instancing

P-Instancing comes in three flavors in the Genie Tools volume two utility: Cubic, Spherical, and Cylindrical. Each does exactly what you would expect, arranging any number of selected polys or objects in the associated array. But there's a lot more possible than that, because each array type has other controls associated with it as well. Let's look at each of these three types.

Cubic Arrays

This would be better understood as a rectangular array, because you can vary the number of units along any combination of XYZ axis vectors. You could just as easily produce a planar arrangement as a 3D one by keeping all but one unit number at 1. A wall of bricks or a tiled floor could be shaped in this manner. Cubic arrays are the simplest to visualize and understand. Aside from setting the

number of the rectangular elements in the configuration, you can also set the distance the objects maintain from each other on each separate axis. The scale and rotation of objects can also be set with each separate axis addressed individually. Scaling and rotation can take place from either the Attach Point or the object's center.

Cylindrical Arrays

This gets a bit more complex. In addition to the expected parameters, objects can be set to rotate by user selected amounts around the Z axis, and there is a special "Align Theta" button that allows objects to have their faces aligned with the cylindrical shape.

Spherical Arrays

This is potentially the most complex of the three, though the on-line help files make operation a virtual snap. There are two "align" toggles here to activate the polys lining up their faces with the spherical arrangement.

Cautions

These operations are very computation intensive, and the more cloning that takes place (the higher number of duplicates chosen on each axis) the more time it takes to place them in 3D space. I tested these attributes on an Amiga 3000 Tower, and even at 68030 speed, some of the finalizing on the edit screen took over a half hour for larger arrays. On an Amiga 4000, this time is cut to about a third. I would hate to have to work with these tools on a stock 2000 unless I had all night to wait for the finished 3D arrays to be ready to render.

One neat animation trick is to set the expected array, and then with "Deform Mode" on (the way Aladdin 4D generates key frame animations), snap every object in the array to the center so that they all overlap each other. Once the animation is rendered, what you witness is the array growing magically out of a single object. Shead's Genie Tools volume one and two deserves more tutorials, all of which I hope to provide you with in Amazing time. For now... Enjoy! And, oh yes, see you in ROMulan space.

*Aladdin-4D ADSPEC Programming 1405 N.
Ellsworth Salem, OH 44460 (216) 337-1329.*

Inquiry #201

*Genie Tools: Volumes 1 and 2 Shead Data Processing
4610 Eubank Blvd., NE #1118 Albuquerque,
NM 87111 (505) 237-8679. Inquiry #202*

•AC•

*Please Write to:
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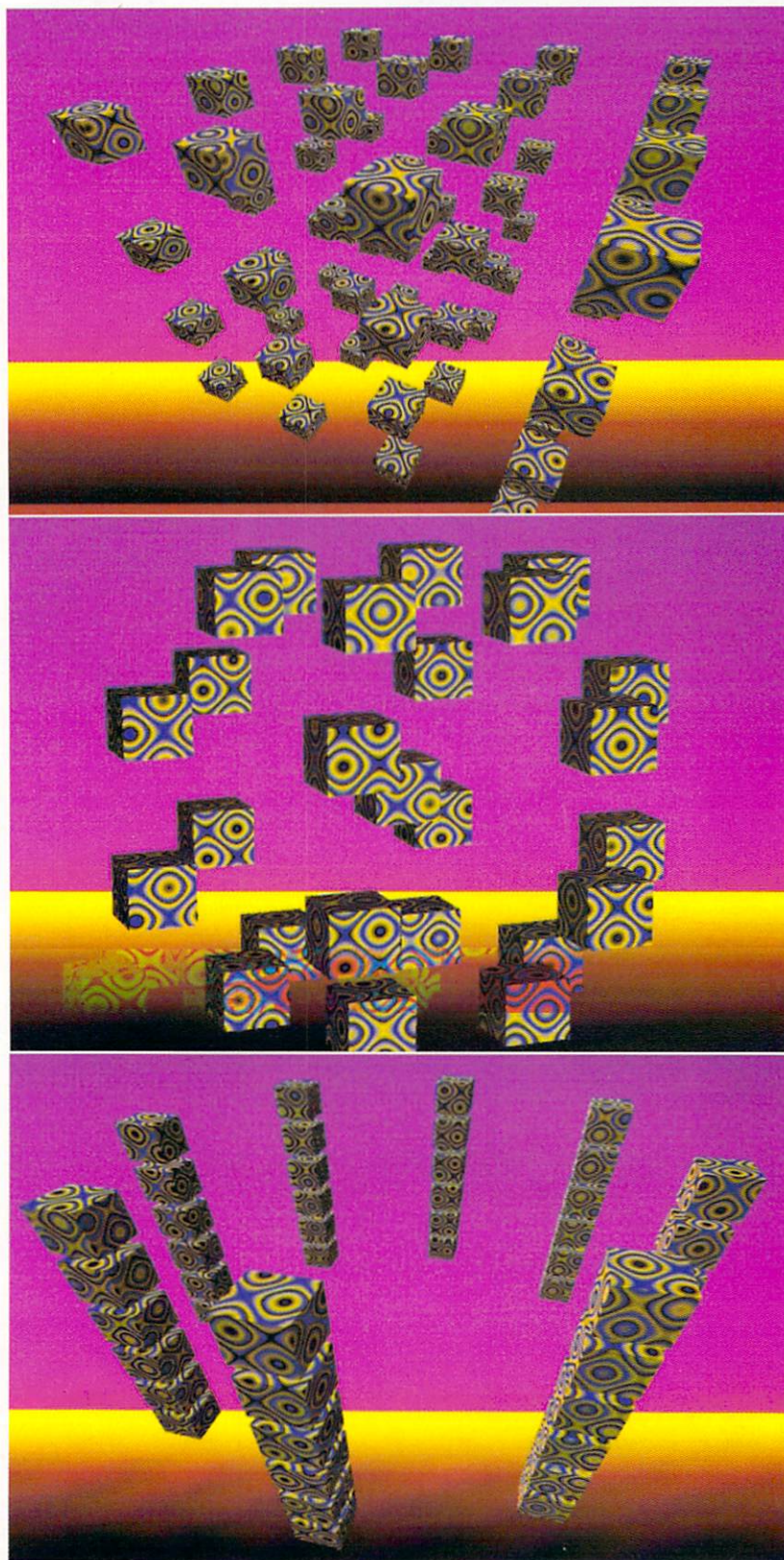


Figure 1 (Top): A cubic array is one of the most beautiful. Its ordered symmetry appeals to our sense of balance, and it's a snap to produce with Genie Tools volume two. Figure 2 (Middle): Spherical arrays can be as dense as you'd like. Here, we've taken the same textured cubic shapes and arranged a small number in a targeted spherical array. Figure 3 (bottom): Cylindrical arrays anyone? What a great way to produce a cityscape with textured buildings, just by varying the P-Instancing in A4D with Genie Tools volume 2.

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HiSoft BASIC 2

by Henning Vahlenkamp

If you're not a veteran of the pre-2.0 era, you've probably never used AmigaBASIC. Developed by Microsoft for the original Amiga 1000 back in 1985, AmigaBASIC was a powerful descendent of the interpreted BASIC languages used by many 8-bit computers. (Actually, ABASIC predated AmigaBASIC, but it was quickly dropped.) By the time 2.0 appeared, AmigaBASIC had become a dinosaur that didn't work too well with newer machines, so it was retired in favor of AREXX.

As veterans will no doubt remember, the AmigaBASIC interpreter was slow and not exactly as "Amigatized" as it could have been. But nevertheless it made programming the Amiga easy, not requiring a lot of in-depth knowledge of the operating system. AmigaBASIC's popularity spawned a number of enhancers (compilers and language extensions), the latest of which is HiSoft BASIC 2.

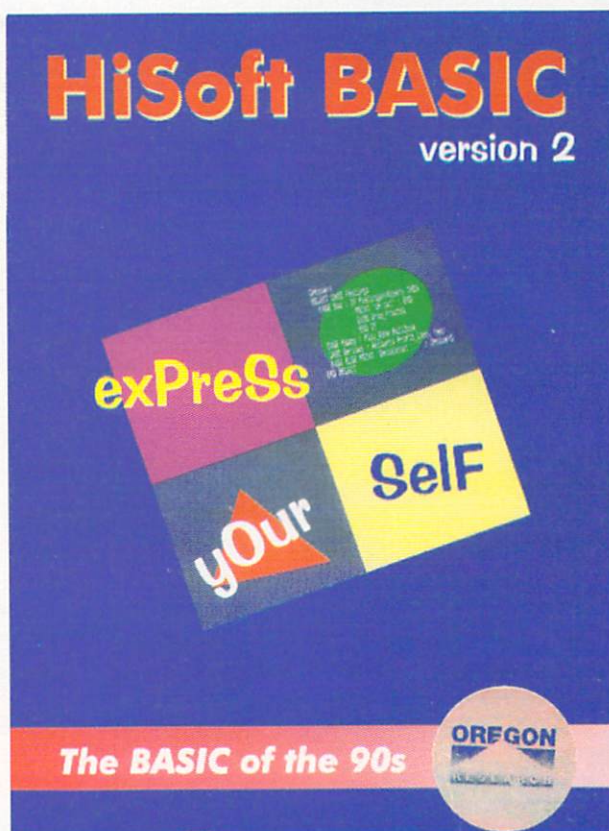
HSB2, a major upgrade to HiSoft BASIC Pro, is an AmigaBASIC enhancer plus a whole lot more. Besides offering high compatibility with AmigaBASIC programs, it reasonably accommodates Microsoft QuickBASIC, Borland Turbo Basic, and even many generic 8-bit BASICs. And it features a professional, Style Guide-compliant integrated development environment (editor/compiler/debugger) reminiscent of Borland's languages for the PC.

All the software ships on a single compressed disk, and you can install it to three floppy disks or your hard disk via an Installer script. A full install, including the wealth of programming examples, consumes under 3MB of storage. Though HSB2 is compatible with all 1MB Amigas running 1.3 to 3.1, a 2MB 2.04+ machine with a hard disk is strongly recommended.

The Language

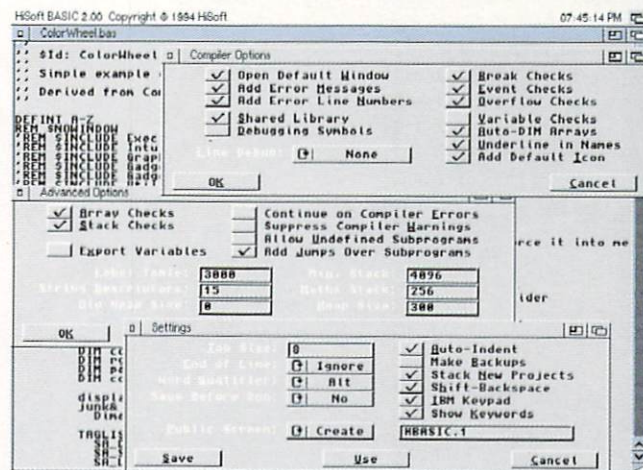
The HSB2 language is essentially a superset of AmigaBASIC with miscellaneous extensions for other BASICs. All AmigaBASIC commands were retained except, as shown in Table 1, the interpreter-specific ones and COMMON, RESUME, and OBJECT.PRIORITY, which are gone for some strange reason. Just about any valid AmigaBASIC syntax is recognized, so the most likely porting problems would involve programs using HSB2 commands as variable names. A supplied include file (AmBas.bh) solves this problem by disabling most new commands, but it has a bug. However, you can fix it by editing AmBas.bh and eliminating the disabled REM.

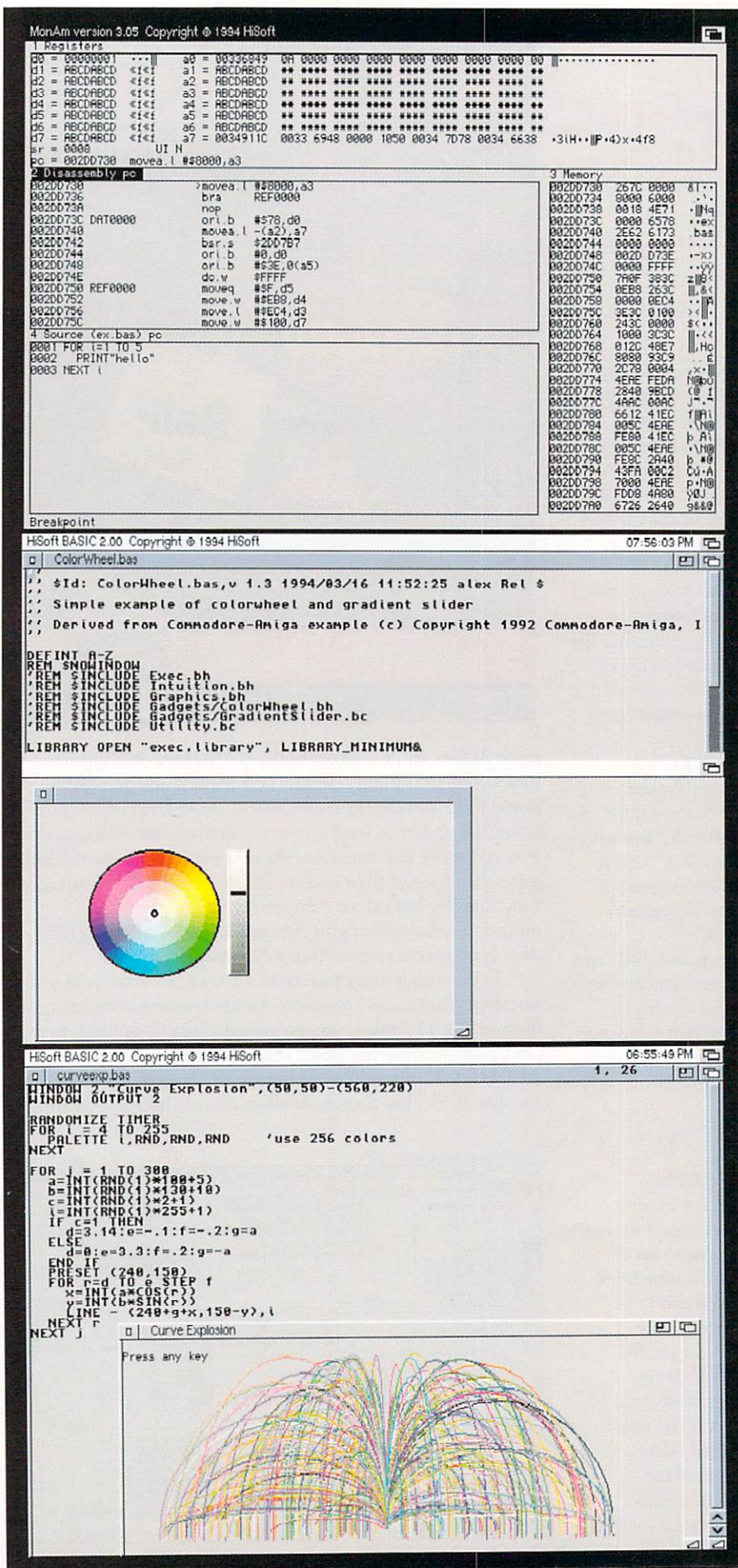
As for language enhancements, a handful of the original commands get some extra parameters or new syntax, and all graphics commands were extended for 256-



color AGA - still no direct EHB/HAM/HAM8 support. You'll also find plenty of new commands offering additional loop and decision constructs, more string manipulations, the ability to load and save arbitrary data blocks, and true recursive functions among other things. In short, HSB2 gives you a lot of the modern, structured BASIC language functionality left out of AmigaBASIC. The only real omission - also missing in AmigaBASIC - is an aggregate data type such as a record or a structure.

Even with a more powerful suite of commands at your disposal, your access to many Amiga features remains quite limited. That is unless you're knowledgeable enough to call OS functions directly. HSB2 provides all the .bmap, .bh, and .bc include files you'll need to use anything in 1.3 to 3.1. On the downside, the documentation reveals little about Amiga





system programming, making the ROM Kernel Manuals required reading. It would have been nice if more OS features were accessible directly through BASIC commands.

The Editor

Although you can use any editor and compile from the command line, you may prefer the built-in editor. The HSB editor integrates source code editing, compiling, and debugging, providing interactive program development. After years of using similar integrated programming environments on the PC, I am convinced that this is light years ahead of the old command line style.

Of course the editor does all the standard text manipulation, and it sports some bells and whistles too. Text blocks, for instance, can be shifted left and right as well as case-altered. Up to ten bookmarks can be set. You can record and play macros, but not load/save them. Windows can be arranged many predefined ways. And you can have multiple views on multiple files. Overall, the HSB editor is definitely sufficient for your source code editing needs, even though it's outgunned by the powerful dedicated editors.

The Compiler

The compiler is invoked via the command line or through menus and hotkeys in the editor. As you might expect, there are many compilation options covering compatibility, safety checks, and debugging. You can select them individually in requesters and your source code, or collectively as convenient menu presets. Only CPU and FPU-specific code generation is absent, so you're stuck with plain 68000 code.

One particularly useful compiler feature is pretokenizing. If you have include files that are seldom modified (e.g. to call OS functions), you can tokenize them just once, saving a tedious compilation step during development. While this time-saver is

great, HSB2 also should be able to create object modules or function libraries (similar to Pascal units) that could be used in other BASIC programs. HSB2 can produce object code to be linked with C and assembly subroutines, however.

Another notable thing is the shared library. Programs can be compiled as either stand-alone or requiring the 52K hbasic2.library that is installed in your Libs: directory. The library eliminates about 14K of initialization and environment code from finished programs, but the documentation doesn't mention its copyright status. Since depending on this run-time library is also somewhat inelegant, I'd recommend stand-alone compilation if you plan to distribute your programs.

The bottom line with any development system is how well it does its job of creating programs. HSB2 is up to that task. Frankly, you can do just about anything in HSB2 that can be done in C.

The Debugger

MonAm, the HSB2 debugger also included with HiSoft's DevPac 3, is somewhat of a mixed blessing. This powerful tool is clearly geared toward expert programmers and hackers. After starting MonAm from the editor, it opens a custom screen divided into a maximum of five sections resembling windows. These windows display register contents, memory dumps, program disassemblies, and source code listings. Since MonAm is a low-level debugger, all operations, such as single-stepping your code or tracing it with breakpoints, are done on individual machine instructions. The only real high-level feature is the association between each BASIC program line and its corresponding assembly language code.

Granted this style of debugging is common on the Amiga, but some higher-level capabilities would be much appreciated. For example, I'd like to step through the execution of each BASIC program line using a highlight bar in the editor window itself. And how about a watch window on the editor screen that allows you to display and modify variable contents during single-stepping and tracing. These aren't exactly novel features; Borland and others have been using them for years in language products for the PC. All Amiga languages should have them too, given their enormous usefulness in debugging.

The Manual

Undoubtedly one of HSB2's highlights, the 640-page user manual is far more readable than the arcane old AmigaBASIC manual. It does a considerably good job tutoring those unfamiliar with BASIC as well as thoroughly explaining how to use the editor, compiler, and debugger. Plus it has an exemplary command reference section. As mentioned earlier, the manual provides a minimum of

Table 1. Differences from AmigaBASIC

New Commands

BEGINIO	FORMATIS	MKFFP\$
BIN\$	FORMATL\$	ON...CLOSE
BLOAD	FORMATS\$	PCOPY
BSAVE	FORMATD\$	PEEK\$
CALL LOC	FREEFILE	REDIM
CALLS	FUNCTION...END FUNCTION	
REPEAT...END REPEAT		
COMMAND\$	INCR	RESET
COMMON SHARED	INITHOOK	RINSTR
CONST	LOCAL	RMDIR
CURDIR\$	LOG10	RTRIM\$
CVFFP	LOG2	SELECT...END SELECT
DECR	LTRIM\$	STATIC
DO...LOOP	MAX	SYSTAB
EXIT	MIN	TAGLIST
FEXISTS	MKDIR	VARPTRS

Removed Commands

COMMON	LLIST	OBJECT.PRIORITY
CONT	LOAD	RESUME NEXT
DELETE	MERGE	SAVE
LIST	NEW	

Modified Commands

CHAIN	DECLARE	LOCATE
CLEAR	DEF FN	SCREEN
CLOSE	FRE	SUB
COLOR	LIBRARY	WINDOW

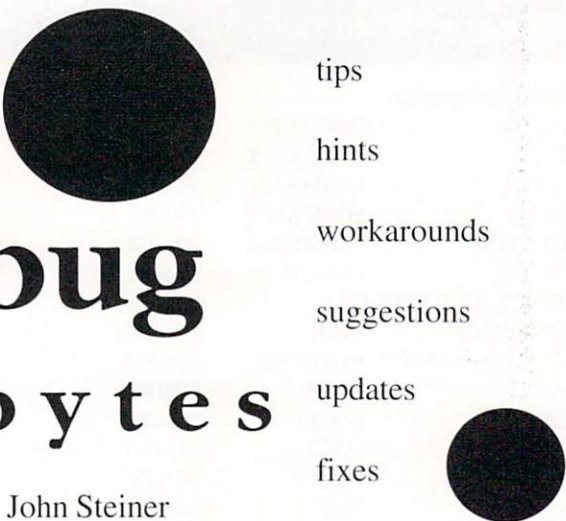
operating system information. It mainly overviews the different modules (libraries, devices, resources, etc.). I suppose this is understandable since the OS is very complex indeed.

Conclusions

The bottom line with any development system is how well it does its job of creating programs. HSB2 is up to that task. Frankly, you can do just about anything in HSB2 that can be done in C. But this doesn't change the fact that C is by nature more powerful and efficient. After all, the Amiga's operating system is written in C. However BASIC is easier to understand, and HSB2 provides a good, user-friendly environment. So if you're interested in BASIC programming, HSB2 is a worthwhile choice.

•AC•

HiSoft BASIC 2
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Inquiry #218



bug bytes

by John Steiner

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Using a PC Mouse on the Amiga

In the August 1994 Bug Bytes, Stephen Leung asked if anyone has tried to put a PC Mouse on the Amiga. Mark OODell sent EMail with a response. Mark writes, *If Mr. Leung is referring to a "bus" PC mouse, he should try to find Amazing Computing Volume 7 Number 1 (January 1992). Starting on page 43, an article by Phillip R. Combs describes the construction of a bus-mouse- to-Amiga adapter.*

If he means the usual serial PC mouse, he can use 'SerMouse11a'. To use it with the built-in Amiga serial port, he will need a DB9M-to-DB25F serial port adapter, which is included with many serial mice. The drawbacks to a serial mouse on the Amiga are: 1) loss of the use of your serial port, unless you have a multi-port serial card; 2) if a flashing-red-box Software Failure occurs, you must use the button on the normal Amiga mouse, because the error-trapping software goes directly to the mouse-port hardware.

If he wants to "hack" a serial PC mouse to adapt it to the Amiga by essentially making it a bus mouse, it is possible, but this method is risky at best because PC mice vary widely in their internal construction; add to that the fact that the cables of most serial mice pass through only four wires of a possible nine, so the entire mouse cable would have to be replaced. I recommend that he avoid hacking a serial mouse, and simply buy a bus mouse which can then be plugged into a suitable adapter. Two good choices are the new Microsoft ergonomic 2-button mouse and the Logitech MouseMan 3-button mouse, both of which are available in bus versions.

A few years ago, when Amiga mice were relatively expensive and serial PC mice were better quality but available mainly from one source (Microsoft), hacking on a PC serial mouse was worthwhile. (See the file "MOUSEHCK.TXT" which appeared on ab20.larc.nasa.gov in 1991.) Nowadays, I honestly would not bother because:

- 1 - PC bus mice are relatively plentiful;
- 2 - Bus-mouse-to-Amiga adapters are available for so nearly the same money as the cost of parts that it's not worth building it yourself (unless you really enjoy overcoming ridiculous yet large obstacles for a very small reward);
- 3 - Brand-new PC mice frequently come with lifetime warranties, which opening and modifying them would violate;
- 4 - DB-9 backshells/hoods/shrouds small enough to fit through the Amiga's mouse-port aperture are hard to find;
- 5 - Thin 9-wire cable suitable for Amiga mouse cables is hard to find, especially since Radio Shack stopped carrying Atari-joystick extender cables.

Reason Install Solution

Dr. Claes-Gustaf Nordquist wrote to comment that he has found a solution to his hard disk install problem with Reason (Bug Bytes, November 1994). He writes, *Basically what I had to do was to place most of Reason's files except the basic program and its icon outside the drawer called Reason, but still on dh1:. Then the program worked like a charm. I have a similar problem with an old word processor called VISA write, a Swedish program for dealing with shares of stock, a spell checker called Fleetcheck and strangely enough also with Distant Suns. He plans to implement similar solutions for these applications.*

CRC Errors on Communications Application

In the August 1994 issue, Steven Cameron was looking for a solution to an excessive amount of CRC errors. Ryan Kramer of New Salem, ND writes, *I have an A590 hard drive controller and a Quantum 240 LPS, very similar to the 270 LPS. I have 1.5 MB of Ram, with 512k on the A590. I can transfer files at full speed with my Boca 14.4 without getting errors, provided the line quality is good. This also worked with the A590's standard 20 MB hard drive, so you can probably count hard drive speed out!*

Modem Compatibility and GPFax

Miguel Samaniego of Buenos Aires, Argentina writes with a question about his modem and GPFax. *I have a Hayes Accura Modem/Fax and the GPFax software doesn't recognize that fax, I guess I get the Supra software version. Is there other software I can use? (i.e. Trapfax)* Anyone using that modem with a different software package that they are satisfied with? Miguel also had a couple of other questions. Does anyone have information about an EMPLANT PCMCIA Version? He also wonders if he can use CD-32 software on his A1230 with the SCSI and a NEC 3xp CD-ROM. Any comments?

Workbench 2.1 Upgrade Revisited

Brett Johnson writes a follow-up note on his original questions in the September 1994 Bug Bytes. He determined that the 2.05 ROMs won't work properly on his revision 4.2 A2000 motherboard. He notes, *I traded my 2.05 ROM to a friend in exchange for his 2.04 with jumper wire and everything works great now. He got a free upgrade and I got a computer that works. Apparently there was nothing wrong with the A2091 SCSI*

card. The computer has no problems accepting it. The 2091 appears to slow down the booting process if there is another SCSI controller plugged in. That made me nervous when I plugged it into my friend's computer. I have heard rumors that it searches for additional drives when there are none, and this slows bootup quite a bit.

Another Keyboard for the A1200

Larry Dennis sent EMail from the University of Texas with a hardware hacker type question. He writes, I'd like to put my A1200 in another case, but in order to do that I'd need to add a different keyboard onto the A1200. The A1200 keyboard looks less sophisticated than the other Amiga keyboards, which makes matching up pins a little hard. Is there a place on the motherboard that I can hook up the clock, data, ground, and +5V pins to an A2000 keyboard? If not, are there other ways to hook up a keyboard? How about it, hardware hackers, any suggestions?

Deskjet Printer Driver Problems

Young Hwan Kim of Cal Poly, writes about a problem with the new HP ink jet printers. He comments, My brother recently purchased the HP520 printer thinking he could use it with an old Amiga 1000 that we have. I have given him a copy of the HP500 driver that came with WB3.0 on my Amiga 1200 and the Super_DJC driver that I purchased from Creative Focus. These drivers only seem to allow text-printing using the printers internal fonts. Graphics and fonts from software will not print. The 1000 was never upgraded and still uses KS 1.2 with WB 1.2. He uses Kindwords and Scribble which are a far cry from Pro-Page which I use on the 1200. Other software which prints out graphics and outline fonts fine on my HP500 equipped system will only print out text on the 1000 and HP520. I'm not sure whether he needs a driver specifically written for the HP520 or that these "new" drivers just will not work properly with KS 1.2 and WB 1.2. I would be grateful for any information you could give. I would try to use the HP520 with my 1200 but he lives 200 miles away and therefore, I would have some difficulty doing that. Anyone using the HP520 or HP560 printers on your Amiga? What drivers are you using that make it work for you?

Amiga and GVP Series II SCSI HardCard Problem:

R. Dewey Mullins III of San Bernardino, California, writes with a question about the GVP Series II SCSI Hard Drive Controller in Amiga 2000 computers with a Revision 4.3 motherboards? He is having trouble making the combination work properly. The GVP Series II SCSI controller is equipped with the latest FastRom from GVP (Version 4.13). After making several attempts at trying to get the above peripheral to work I could find no solutions. The older GVP Series I SCSI controller works great in the older A2000. The GVP Series I controller does not support CBMs' rigid block format, (this is the reason for the upgrade). I have two other Amiga 2000's as well with revision 6.2b and 6.0 motherboards which work just fine with either GVP SCSI controller. The Amiga 2000 computer with the Revision 4.3 motherboard has been upgraded to 1 megabyte of chip ram as well as WorkBench 2.0. Any suggestions for Mr. Mullins?

More on High Density Drives

Joseph Holeton of Appleton, WI writes with comments about using high density drives with Ami-Back. He writes, First, in Userstartup put c:Highdensitypatch.

You must also Make a copy of "PCO:" Rename it to HPC2:", Go to Icon Information and change The Info to "ACTIVATE=1" "UNIT=2", and save it. You then must use 'Newzap' or an editor to go into the file and change where it says OUNIT=00 To OUNIT=2". Then save it and that is it for that. For the above, use 'Unit=1' if you added a second internal unit. But the original Commodore Drive is too thick to add a second internal, so I added an external XL drive, and it will only except it as unit 2.

Now that you are set up for PC use, letOs solve the problem of using the XL drive (as a low Density, or as a high Density Drive, without rebooting.) After you are up and running, you will find everything works good as a HIGHDENSITY Drive, but stop right there. You must continue to use High density disks in the drives, if you put a regular disk in, you will go into Low Density mode, and it will stay there. The solution is to use 'Toolmanager', or 'ToolsDaemon', or go manually into CLI or Shell, I use 'ToolDaemon'

First step: REMOVE the patch, so first command in ToolsDaemon (in Shell) must be
HIGHDENSITYPATCH REMOVE.

Second step: Add a command in ToolsDaemon' (in Shell)
C:HIGHDENSITYPATCH. You must REMOVE the Patch, Then RESTART it again as it was done in USERSTARTUP. You do not have to reboot, or leave the workbench, But if you don't have either of these programs, you can manually do it from shell.

One more thing, if you add a CD-ROM (internal), and you are running two hard drives (I have a SCSI on top, and the IDE under it.) You may find that the power cords will hit the bottom hard drive, and cannot be pushed in. Go to the hardware store and get some banding (the type you can hang pipes with, that have predrilled holes) and you must have 4 flathead screws. Be sure they are flathead, or you can short out the circuit board on the left side where the plastic insulating sheet is at. Drop the bottom Drive 1 Hole on the Banding strips, and then put it back in. It must drop back in without force, or the flathead screws are too big. Also, do not let the drive sit on the big heat sink on the motherboard. Now you will have enough space so the power cord to the CD-ROM will slide in between the two hard drives.

That's all for this month. If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 2140
Fall River, MA 02722

...or leave EMail to
John Steiner on Portal
73075,1735 on CompuServe
Internet mail can be sent to
73075.1735@compuserve.com
FAX John Steiner at (701)280-0764
(8:30 A.M. to 5:30 P.M. Central time, Monday-Friday)

Creating Quick and Easy Seamless Texture Maps

by William Frawley

Last time we discussed various methods for creating your own background images and textures. This month, let's take that subject a bit further by examining a quick and relatively easy technique for converting those appropriate images into seamless textures suitable for tiling onto 3D objects. For those of you unfamiliar with 3D animation, perhaps a brief exposition is in order.

Seamless Defined

A seamless image is one whose sides are perfectly congruent with each other. In other words, if the left edge of this same image is abutted to the right edge of this same image, there will be no visible "seam" between them. The image's content will flow undetected into itself. This same concept applies to both the top and bottom edges as well. A completely seamless image then allows itself to be tiled, or laid side-to-side and/or top-to-bottom, thus forming one cohesive pattern.

Usage

So why are seamless images so important? Well, maybe convenient is more accurate, but their significance is nowhere more important than in the world of 3D texture mapping. With a properly constructed seamless texture, one small image of a chain-link, for example, when mapped repeatedly onto a plane will produce a whole chain-link

fence. Get the picture (Figure 1)? With that in mind, our task here then will be to employ some 2D image processing to supplement 3D applications.

Various Seamless Techniques

There appear to be several methods for creating/converting images into seamless textures. We'll focus on a technique that seems best suited for rather homogeneous, organic-looking images like gases, marble, terrains, rocks and other textures devoid of artificial features. With this method, it is important that there be no distinguishing features present in the base texture because they will noticeably repeat themselves over the course of multiple tiles, thus destroying the subtle effect. However, this rule usually applies to organic textures with no individually recognizable elements, unlike bricks, fences, stones, etc. where other methods described below are most likely used to create these types of seamless textures. Substances like wood fall on the borderline with these methods, depending on how distinct the grain patterns are. Before I describe our quick and easy process however, let me briefly mention those other possible techniques.

One foolproof method for creating seamless images uses a computer algorithm to do the work mathematically. Such processes might be found in some of the Photoshop plug-in filter technology. No seams, no sweat. Another method suitable for more regular patterned motifs like the chain-link fence or brick examples alluded to earlier involves cutting off a strip in just the right location from one side, flipping it 180 degrees and enjoining it to the opposite edge in such a way so that the pattern repeats naturally. Manual touch-ups with a paint program are usually necessary for tweeking the edges together correctly. This method is similar to the one we'll be employing.

Remember, the method we'll be covering is quick and easy, but not

entirely foolproof for some textures. It is best used to smooth the hard seams for a tiled image. Unlike a true seamless image, which are best designed for obvious repeating patterns like bricks or fences, this technique produces a quick hack by overlapping the edges with an alpha channel modulating the composite process. But, enough with the generalities, here are the specifics.

Which Software Will Work?

Any image processing program that can utilize an Alpha channel for compositing or has a transparency gradient mode for brushes will work. This includes programs like The Art Department Professional, ImageMaster, OpalPaint, ImageFX and, of course, Photoshop (if you're using a Mac emulator). The process described below will use the Alpha channel to composite between images, but can easily be adapted to using brushes with an Alpha or transparency gradient. Utilizing a brush simply substitutes for cropping a portion of an image and saving that piece for later compositing. The following tutorial will describe how to process one edge of an image only — the side. The same technique can then be applied to the top/bottom edge.

The How-To Part

First, scan or digitize some kind of texture, or use an image obtained by some other means that isn't already seamless. Load it into your desired image processor. For the record, I'm using ADPro. Note and record the image's dimensions W and H. If you have a swap or temporary buffer, Save the image to it. This will just make things a little easier when reloading later.

Next, crop a strip off of the left side of the image that is about 10-20% of the width of the entire image but exactly the same height. In other words, this new strip will have dimensions of $X=W*.1$ and $Y=H$. Save this strip to RAM: or your hard drive as "Strip."

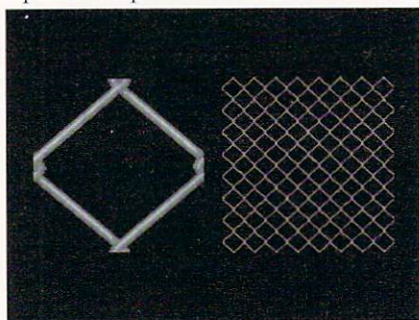


Figure 1: An example of a true seamless texture. Note the right edge matches perfectly with the left; a perfectly congruent seam.

Now create a strip with the same dimensions (X and Y) as the last strip with a horizontal gradient of black to white running from left to right. ADPro's Backdrop loader works quite effectively. This image will serve as our Alpha channel mask between the original image and Strip. Save this image as "Strip.alpha." Depending on which program you're using, you may need to convert this image to 8-bit greyscale for use as an Alpha channel. As of ADPro 2.3 or later, this is not necessary when compositing with Alpha images. Refer to Figure 2 if you're having problems conceptualizing this process thus far.

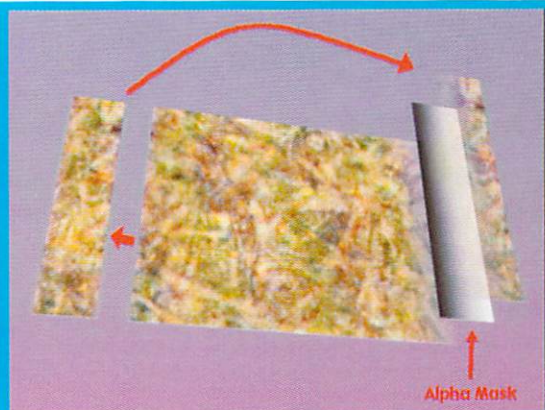
Again, reload the original image, from the swap buffer if applicable, but this time crop the area exclusive of the one in which you cropped Strip from. The dimensions should be $W'=W-X$ and $H'=H$, and an X Offset of X. This is our new base image.

For the final step, with the NewBase image still residing in the work buffer, composite Strip onto this image using Strip.alpha as the Alpha channel between the two. Remember to use the proper X Offset ($W'-X$) for both Strip and Strip.alpha so that their right edge aligns with NewBase's right edge. The result shows that the image's new right edge gradually fades into its old left edge, thus forming a perfect seam with its new left edge. The essential chore is handled by the Alpha channel controlling the mix from left to right between NewBase and Strip. Render or display your results.

Don't sweat if you're hard pressed to recognize the difference in its current state. Wrap it and the original onto a sphere or cylinder alongside each other in your favorite 3D software and then render to better see the difference. You may have to rotate the sphere's heading 90 or 180 degrees to bring the seams into camera view, depending on where your software positions the seam when texture mapping. Check out Figures 3a-3c to see how a scan of Jupiter became seamless along the side.

For complete seamlessness, repeat the process above with this new image, remembering that all the previous dimensions will be different and the strip will be across the top, not the side. In order to see the results of complete seamlessness once both the top and sides have been processed, map (tile) the image onto a plane so that four images fit perfectly across the face like a checker-board (Figure 4c).

Figure 2: A visual representation of the quick and easy way of creating a seamless texture map as outlined in this article. Essentially, a strip is cropped off of one side of the image and composited onto the other side using an Alpha channel to control the opacity of each pixel in question between the strip and the original image. The old right edge then gradually blends into the old left edge.



The Macro

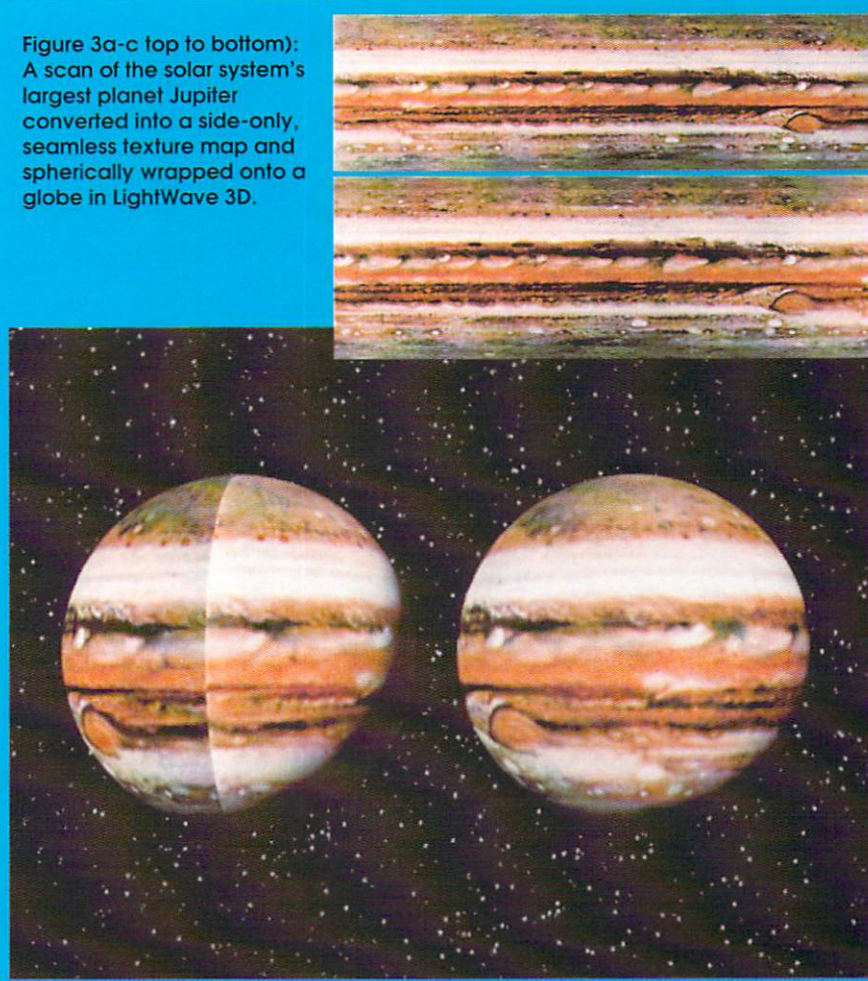
For those of you using ADPro, I've included yet another ARexx macro that will create a seamless image automatically in less time than it takes to blow your nose. Assuming you have enough RAM, a typical image takes approximately 10 seconds. Ahhhh, the power of ARexx!

First, you'll be prompted to choose whether to process the side, the top or both. Usually, if you're only going to be wrapping the image spherically or

cylindrically like a planetary or soda can texture, creating a seamless side is sufficient. However, if you plan on mapping the texture to a plane like a tiled floor, you'll want to do both edges. The "Top Only" choice is included for completeness. I haven't yet found a need to tile textures in the vertical direction exclusively.

Next, you'll be asked to what degree is the texture homogeneous in its pattern or motif. As mentioned earlier, if the image contains regions of distinct

Figure 3a-c top to bottom): A scan of the solar system's largest planet Jupiter converted into a side-only, seamless texture map and spherically wrapped onto a globe in LightWave 3D.



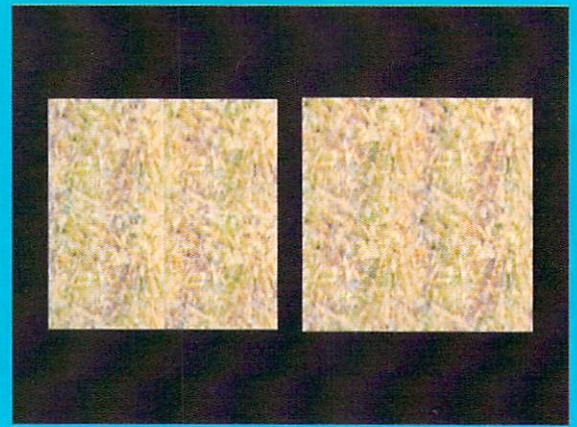


Figure 4a-c (left to right): Another scan of a home-made texture converted into a seamless texture on all sides. The difference between the original and seamless version can easily be seen when tile-mapped onto a plane in a 3D environment — here again, LightWave 3D.

patterns, the strip to be composited will have to be cropped larger in order to increase the distance it takes to blend it with the underlying region of the base image. In this case, you'd want to select "Chaotic." Otherwise, if you can get by with "Homogeneous," more of your original texture will remain intact.

As you can see from the `_SeamlessMap.adpro` macro, in order to create the Alpha channel strip, I've used the BackDrop loader in "Color" mode. Specifying "Grey" fails to use the specified color or grey values and direction information properly. I assume this is a bug, but I haven't yet contacted Elastic Reality about the matter yet. Anyhow, just specify a color backdrop and use the appropriate greyscale values and it'll work fine. If you need to convert the Alpha mask to an 8-bit greyscale for earlier versions to composite, add the line:

Operator "Color_To_Grey"
right after the BackDrop loader line.

Well, that about wraps (no pun intended) it up for this time. Hopefully, if you ever need a seamless texture in a pinch, you'll keep this quick method in mind — even quicker with the macro. If you despise typing in these macros by hand, feel free to write to me in care of this magazine for

details on getting this month's and any previous macros listed in this column by mail or modem. Please allow about 30 days for your letter to reach me from *Amazing Computing*. Until next time, hope this stuff was useful if not mildly interesting. Chow!

•AC•

Please Write to:
William Frawley
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

`_SeamlessMap.adpro`

```
/*
** _SeamlessMap.adpro
**
** $VER: _SeamlessMap.adpro 1.1 (September 20,1994)
**
**
** DESCRIPTION:
** This ADPro macro turns the current image into a seamless
** texture map suitable for tiling in any 3D animation soft-
** ware such as LightWave, Aladdin4D, and Imagine.
**
** REQUIREMENTS:
** For best results, use a fairly homogenous texture.
**
** NOTE:
** This will decrease the size of the original image as
** either or both top or side "strips" need to be cropped
** and composited (overlaid), thus reducing the total
** area of the final image. Also, this is NOT a foolproof
** method, just a quick and easy hack.
**
** CREDITS:
** William Frawley (some portions adapted from ASDG macros)
**
**.....*/

OPTIONS RESULTS

ADDRESS "ADPro"

/*
** Save the current environment.
**/

TempDefaults = "T:TempADProDefaults"
SAVE_DEFAULTS TempDefaults

/*
** Ask User to Rate Degree of Homogeny of Image
**
** For example, if image is not very homogenous, a larger
** strip will need to be cropped and composited for a more
** convincing appearance, and vice versa.
**/

OkayN "Homogeny Rating" "Image Degree of Homogeny?",
"Homogenous|Medium|Chaotic|Cancel"
IF (RC=0) THEN CALL ErrorOut 10
IF (RC=1) THEN StripRatio=10
IF (RC=2) THEN StripRatio=7
```

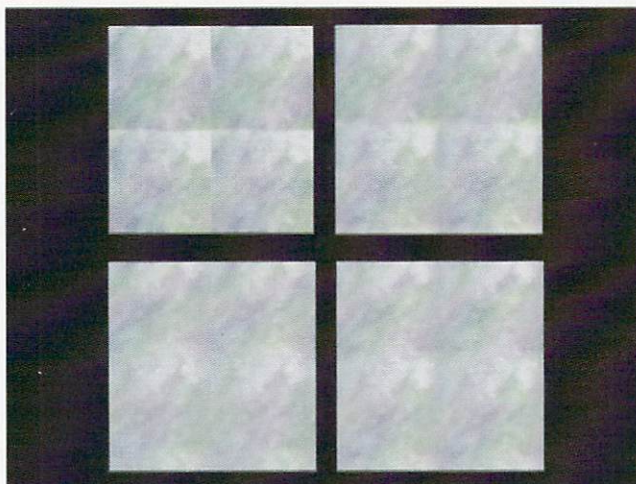


Figure 5: The results showing the various degrees of seamlessness offered by the included ADPro macro `_SeamlessMap.adpro`. Clockwise from upper left: A) No seam B) Homogenous C) Medium D) Chaotic. Use the Chaotic setting when there is much distinct noise in the original texture for a more effective blending of the seams.


```
IF (RC=3) THEN StripRatio=5
```

```
/*
** Ask User Whether to Tile Left/Right, Top/Bottom or Both
*/
```

```
OkayN "Seam Orientation" "Which sides to be seamless?",
"Top/Bottom/Left/Right/Both/Cancel"
IF (RC=0) THEN CALL ErrorOut 10
IF (RC=1) THEN SeamFlag=1
IF (RC=2) THEN SeamFlag=2
IF (RC=3) THEN SeamFlag=3
```

```
/*
** Start the Processing Loop
*/
```

```
IF SeamFlag=1|SeamFlag=3 THEN DO /* Process Top Strip */
```

```
/* Get Current Image Dimensions & Save to TEMP */
XSize /* Image Width */
ImageW=ADPRO_RESULT
YSize /* Image Height */
ImageH=ADPRO_RESULT
```

```
SAVER "TEMP" "XXX" "RAW"
```

```
/* Initialize Variables for Top Strip */
StripW=ImageW /* Same as original */
StripH=ImageH*StripRatio /* Percentage of original */
FinalW=ImageW /* Same as original */
FinalH=ImageH-StripH /* Leave off old top strip */
GradDir="UL 0 0 0 UR 0 0 0 LL 255 255 255 LR 255 255 255"
CALL New_Edge()
END
```

```
IF SeamFlag=2|SeamFlag=3 THEN DO /* Process Side Strip */
```

```
XSize
ImageW=ADPRO_RESULT
YSize
ImageH=ADPRO_RESULT
```

```
SAVER "TEMP" "XXX" "RAW"
```

```
/* Initialize Variables for Side Strip */
StripW=ImageW*StripRatio
StripH=ImageH
FinalW=ImageW-StripW
FinalH=ImageH
GradDir="UL 0 0 0 UR 255 255 255 LL 0 0 0 LR 255 255 255"
CALL New_Edge()
END
```

```
/*
** CleanUp & Exit
*/
```

```
ADDRESS COMMAND "C:Delete >NIL: T:Strip"
ADDRESS COMMAND "C:Delete >NIL: T:Strip.alpha"
```

```
Okay1 "Finished!"
CALL ErrorOut 0
```

```
/*
** INTERNAL FUNCTIONS
*/
```

```
ErrorOut:
```

```
PARSE ARG ExitCode
```

```
IF (EXISTS( TempDefaults )) THEN DO
LOAD_DEFAULTS TempDefaults
IF (RC = 0) THEN DO
ADPRO_TO_FRONT
OKAY1 "Error restoring settings."
END
```

```
ADDRESS COMMAND "Delete >NIL:" TempDefaults
END
```

```
EXIT ExitCode
```

```
New_Edge:
```

```
/*
** Crop Strip & Save to T:
*/
```

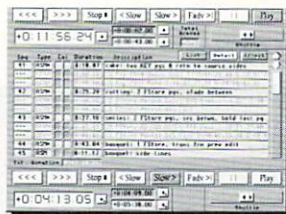
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Circle 102 on Reader Service card.

```
Operator "CROP_IMAGE" StripW StripH
IF (RC=0) THEN CALL ErrorOut 10
```

```
Saver "IFF" "T:Strip" "RAW" /* Save to T: */
IF (RC=0) THEN CALL ErrorOut 10
```

```
/*
** Create Alpha Gradient For Top Strip Compositing
*/
```

```
Loader "BACKDROP" "XXX" StripW StripH "COLOR" GradDir
/* NOTE: Specifying "GRAY" will NOT work correctly! */
IF (RC = 0) THEN DO
ADPRO_TO_FRONT
OKAY1 "Sorry, BACKDROP Loader Failed!"
CALL ErrorOut 10
END
```

```
Saver "IFF" "T:Strip.alpha" "RAW" /* Save to T: */
```

```
/*
** Load Original Image, Composite Strip Using Alpha, and
** Crop New Image Discarding Area of Original Strip
*/
```

```
Loader "TEMP" "XXX"
IF (RC = 0) THEN DO
ADPRO_TO_FRONT
OKAY1 "Sorry, TEMP Loader Failed!"
CALL ErrorOut 10
END
```

```
Loader "IFF" "T:Strip.alpha" ASALPHA COMPOFFSET,
ImageW-StripW ImageH-StripH
```

```
Loader "IFF" "T:Strip" ALPHAMEM COMPOFFSET,
ImageW-StripW ImageH-StripH
```

```
Operator "CROP_IMAGE" FinalW FinalH ImageW-FinalW,
ImageH-FinalH
IF (RC=0) THEN CALL ErrorOut 10
```

```
RETURN
```


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Roomers

by The Bandito

From emulations to exclamations The Amiga (and the world) continues.

[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]

Emulation, The Sincerest Form Of Flattery

One of the more colorful Amiga companies is Utilities Unlimited, best known for their Macintosh emulation board for the Amiga. Like other Amiga developers, they've been looking for other markets to attack. Their initial target (apparently) is a 486 emulator for the Macintosh. What's that, you say? Where's the long-promised 486 emulator for the Amiga? Jim Drew says that the Amiga version of the 486 emulator will be done first, indeed, that it *has* to be done first for technical reasons. Cynics among you may be wondering where the Amiga version is; it being long overdue. Well, you're not the only cynics around.

UUI has been getting some rather skeptical press about their 486 emulation for the Mac, especially as regards price, performance, and delivery. UUI's claims that their emulator can exceed equivalent Intel clock speeds on a 68040 has drawn cries of "Impossible!" But now the scuttlebutt is that Apple is very interested in buying the technology, if indeed

it really works as advertised, though this may delay entry of the product into the market. Maybe Apple should be keeping an eye on the Amiga market to see when the emulator might actually come out. In any event, UUI has been awfully quiet lately. We'll just have to see what comes out...

Put The Pedal To The Metal?

The 68060 accelerators for the Amiga are on the way, according to the scuttlebutt drifting around the Amiga community. Unfortunately, plans for the accelerators have slowed to a crawl with the declining fortunes of Amiga hardware developers. But it may be too late for the best marketplace, which is the professional video production market. Most of them are switching to other platforms. This is causing the potential market for accelerators to dry up, too. Why bother to get an accelerator if you're going to be buying a whole new computer? It's indeed a grim situation. The prolonged delay in finding a new company to produce Amigas is exacting a heavy toll.

Game Machine Wars Continue, Minus Commodore

While Commodore is (temporarily or permanently) out of the action, the market for game machines isn't standing still. Lots of new platforms are heading for the market, and the game magazines are going crazy over them. Unfortu-

nately, the CD32 is getting missed in almost all of the "survey" articles that cover new CD-ROM platforms. Even though the platform has hardware specs that are at least competitive, the lack of product right now and the uncertain future is enough to keep it out of most magazines. The window for a CD32 re-introduction is closing down rapidly; the hype over new machines would make it very difficult for an "old" machine to get a fair hearing.

Speaking of new machines, those determined folks at 3DO aren't giving up in the face of new hardware competition and lackluster initial sales. 3DO is making a serious bid to catch up with the new generation of video game hardware. They've announced an upgrade for current 3DO machines to a PowerPC chip that will absolutely blow away the CPU power of any other game system that's been announced. Now if they can add RAM, they'll really have something.

The other kicker for 3DO might well be the 3DO card for PCs being developed by Creative Labs, if the price is low enough. It'll have to be under \$200 to really make it, though. And then where would you put this PowerPC upgrade? Lots of unanswered questions here, folks. But we'll be seeing this 3DO card by Christmas, according to the reports, so we'll have a chance to judge for ourselves. (Now doesn't this remind you of the Amiga-on-a-card concept the Bandito suggested a couple of years ago?)

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Circle 103 on Reader Service card.

The Sony PSX is the "Amiga" for 1995, according to some developers in the know. What does that mean? Well, everybody talks about how cool the hardware is, but nobody is sure that the machine will be successful in the marketplace. Sure, Sony is a vast consumer electronics giant with billions of dollars in annual sales. Then again, so is Philips, and look how well they did with CD-I. Eight years and over \$1 billion later, they've never managed to crack the market. You can't say they didn't try. For all of Sony's vaunted power, they have shown their weaknesses before. Particularly in consumer software; their Sony ImageSoft division has done OK, but it's never had any hit products. Still, the PSX (previously called the PlayStation) is a nice piece of hardware. If Sony can hang around for the two years or so it'll take before developers get the hang of the hardware, they might have something. If they can lower the price down from the stratospheric \$500 tag that's been bandied about.

With all of these hardware rumors circulating, entertainment software is once again in turmoil; the killer platform is yet to be anointed. Major contenders are PC CD-ROM, 3DO, Sega Saturn, Nintendo Ultra 64, and Sony PSX. The hardware is converging enough so that you can almost make one title for all of them (the Nintendo is the only one lacking a CD-ROM, so it's the real odd ball of the group).

Oh, yes, there is the Jaguar, but that's become "Jaguar Who?" as you might have known if you'd followed the Bandito's columns. The mythical Jaguar CD-ROM player has stayed mythical, and the lack of software development has caused the Jaguar to keep a low profile. 3DO has a good shot, now that they've done some mid-course corrections and have a more reasonable price tag.

Nintendo will probably do OK in the short term, but fall behind in the long term as they will find it much, much harder than they think to line up software developers. Without a CD-ROM drive, they'll be cut off from the mainstream of development and several types of games will be functionally impossible on the machine. With the other machines, the key is getting software that takes advantage of the unique hardware features offered by each platform. Which

always takes a couple of years, despite the wishful thinking of the hardware manufacturers. With that in mind, 3DO is the best positioned to have the killer software for Christmas 1995.

Commodore Sets Sale

While the arguments continue over who will get the rights to the Amiga, Commodore is liquidating the remains of its North American headquarters. What's left is mostly junk: old furniture, a couple of moth-eaten mainframe computers, bits and pieces. The 600,000 square foot facility is inhabited only by memories, and dusty ones at that. But it still costs \$8,000 a day for the utilities, and Commodore needs to clean the place out so that their lease (which runs to 1999) can be canceled.

So just about the last vestiges of an American Amiga operation are gone. A few employees linger in Norristown, but they may not last long. While both of the remaining bidders have expressed interest in using American facilities for R&D or manufacturing, there may not be much left to use. At this point, most of the Commodore engineers (if not all) have been hired elsewhere. Manufacturing facilities are generally cheaper in other countries. You can bet that financial considerations are going to be very important to the new Amiga company, so overseas facilities look very likely.

A Deal Delayed Is No Deal At All

While Amiga fans continued to watch the drama, noses pressed against the windows of the smoke-filled rooms, little action could be seen. Unless you count the pronouncements every couple of weeks that a deal was almost done, just another week now. These guys have been at it long enough to hammer out a national health care plan, haven't they? What's the hold up?

What does all this maneuvering and posturing mean? Let's cut through the self-serving fertilizer and get to the real substance. The basic fact: despite lots of words expended, no deal has been finalized yet. Let's hear what some of the people involved have been saying in public.

According to the best info the Bandito can glean, Bahamian liquidator Franklyn Wilson has been meeting with both David Pleasance (the head of Commodore UK) and Alex Amor (head

of CEI), the two finalists in the bidding. Both companies plan to resume manufacturing Amigas, though exactly how they see the potential markets developing is different. Clearly the Euro market is for game machines, while the American market is more interested in A4000's for professional use. CEI plans to manufacture in Philadelphia as well as in Europe; Commodore UK would make the machines in Scotland.

It's pretty clear now that Amigas couldn't become available until sometime in the spring of 1995, even if everything went swimmingly from this point forward.

For a while there, the Commodore UK bid looked like it was a shoo-in. But things went awry after it was determined that the Philippine plant had been seized for back debts, and that no parts would be coming from that location any time soon. The plan Commodore UK submitted to the liquidator was based on the condition that all the Amigas and parts in the Philippines would be available immediately after the purchase of Commodore. However, due to unpaid bills, the Philippine government and other creditors have seized the whole building, and they're going to guard it until they can find a way to squeeze money out of it. Which means they aren't letting anyone have the products.

The general reason given for the delays is the complex nature of Commodore's structure, with interlocking international companies and subsidiaries entwined like mating octopi. No doubt it gave the revenue agents from all those countries fits trying to decipher it.

The whole process is complicated even more by the specter of US courts, which may still intervene in the whole bankruptcy process — which of course would merely serve to mess things up royally. But it may happen if the courts feel that they have a compelling interest (read: might make lots of money) in the proceedings.

What happened to the other bidders? They've dropped by the wayside, mostly because their interest was tepid and they were only interested in bits and pieces. Samsung only wanted the chip set, as did Hewlett-Packard. By the way, HP just signed a deal with LSI Logic to use their chips in set-top boxes, so it looks like HP's interest in Amiga chips has completely disappeared.

All this maneuvering continues to erode the Amiga-based business community. The latest casualty is CBM Canada, which is closing their doors because they don't have anything more to sell. They hung on as long as they could, but with no new products coming in, the end was inevitable. There's no way they can hang on until next year when Amiga products may make it back onto the market.

Reading The Obits

Meanwhile, in the media Commodore is being given brief obituaries, if any. At least some of the gaming magazines have noticed, and sadly waved good-bye. *MacWeek* (the Macintosh industry newsweekly) had a nice obit, mentioning the Amiga's pioneering role. Columnists have begun referring to the Amiga in the past tense, and are finally awarding it some recognition for the many technologies it started off. The net result of all this media attention, though, is to make things very, very difficult for any company hoping to revive Amiga sales.

Amiga Futures?

According to Commodore UK, there are seventeen Commodore engineers currently residing in Norristown, and the plan is (if Commodore UK ends up with the company) that staff will be expanded to sixty people. About fifteen people will be supporting existing products and deriving new products from the present architecture. The remainder will be working on a new RISC-based Amiga.

Since Commodore UK is the likely inheritor of the Amiga, it's worth examining the plans they've mentioned for the future of the Amiga. First of all, they've said that the AAA project is certainly dead, though the reason is a bit strange — Pleasance says the hardware is almost complete (stretching the truth a bit) but that software would take 18 months to complete. Yes, but isn't this going to be true for any new chip set? And what about the time it will take to port an operating system to a whole new RISC CPU; would that take any less time than supporting some graphics chips?

Anyway, the plan is to go gung-ho developing a new RISC-based Amiga, probably using the HP PA-RISC chip (though that would be subject to what sort of deal they can cut with the RISC chip makers). They'd throw in a DSP, and some off-the-shelf SVGA chip set

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with some blitter capability. Software? Well, they're not mentioning that, but it's obvious that you'll need a whole new operating system. They could (fairly quickly) adopt Windows NewTek to such a box. But porting AmigaDOS to this new machine would take years, by

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which time no one would care very much. An emulation mode would take nearly as long. So what's the point here? To play off of the Amiga name? Seems rather strange, given the general ignorance of the Amiga in the marketplace. Maybe they're hoping to get Amiga owners to buy this new machine. But if you can't run any of your Amiga software, what's the point?

Commodore UK does plan extensive support for developers, include free loaner machines for development work. Though it's going to be awfully hard to convince developers to work on Amiga projects unless they see the prospects for some sales.

More cleverly, Commodore UK plans to aggressively pursue sublicensing with third-party developers who are not in competition, like NewTek and Scala. Of course, they're interested in making money off of the Amiga in any fashion possible, which is eminently sensible (unlike previous Commodore management).

Commodore UK expected to have products around the middle to end of

November, but that's now impossible because of the parts situation. It looks more like March to the Bandito, if everything goes right. They do plan to have the CD drive for the A1200 and the expansion box for the CD32, and then within a few months of that release some new products using existing technology.

Commodore UK also plans to create an Amiga card for the PC. Or, at least, license that off to some other manufacturer. The Bandito thought this was a nifty idea a few years ago, but it seems less positive now. How many people want to run Amiga software on their PC? Wouldn't this just hurt Amiga sales? It seems more like a hastily tossed-out idea rather than a well-thought-out strategy.

Amigas More Expensive Than Ever

In a rather strange turn of events, Amigas are selling for high prices these days as anxious professional users rush to protect their investments. They want to know they have backup machines, or they need more machines to expand their business. And they're paying a premium for Amigas, especially for ones that can handle a Video Toaster. Of course, Amiga 4000s are the most sought after, but Amiga 2000s and 3000s are also in demand. And if you happen to be a lucky possessor of the very rare A4000T... well, name your price.

Commodore Is Dead. Long Live The Amiga!

It's for us to stop dreaming about the Amiga's future and realize that the glory days are most probably over. The Amiga is no longer a technology that's advancing into the future, despite the wishful press releases from CEI and Commodore UK talking about future RISC Amigas. The reality is that any such new computers wouldn't really be Amigas any more, with all new hardware and all new software. You might be able to run some current Amiga software in an emulation mode, but that's not really a new Amiga, is it?

Those Amigas now in service may be the last Amigas that we will see. But they have many fine hours of computing left to them. And the Amiga has left an indelible mark on the history of computing.

While Commodore had some of the worst management the computer industry has known, the Amiga stands as a shining example of excellent hardware

design. Its capabilities foreshadowed the directions of the entire computer industry: thousands of colors, multiple simultaneous screen resolutions, multitasking, high quality sound, fast animation, video capability, and more. It was the beauty and elegance of the hardware that sold the Amiga to so many millions of people. The Amiga sold despite Commodore's neglect, despite their bumbling and almost criminal marketing programs. Developers wrote brilliantly for this amazing piece of hardware, creating software that even amazed the creators of the hardware. The Amiga heralded the change that's even now transforming the television industry, with inexpensive CGI and video editing making for a whole new type of television program.

Amiga game software also changed the face of entertainment software. Electronic Arts launched themselves headlong into 16 bit entertainment software with their Amiga software line, which helped propel them into the \$500 million dollar giant they are today. Cinemaware's *Defender of the Crown* showed people what computer entertainment could look like; real pictures, not blocky collections of pixels. For a while, the Amiga was the entertainment software machine to have.

Well, enough of the eulogy, already. The Amiga isn't dead, not as long as one Amiga is still in use somewhere. Commodore has died the death they deserved; stupidity is its own reward sometimes. Now we are hopeful that a new company can arise from the ashes and carry the banner of the Amiga forward into the future. That may or may not happen; only time will tell. It may be, sad to say, that another Amiga will never roll off an assembly line. But the Amiga will live as long someone, somewhere uses one and appreciates it. And that, my friends, will be happening for many years to come.

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Deathbed Vigil and Other Tales of Digital Angst

A Review of the video

by Dave Haynie

by Merrill Callaway

Dave Haynie was the chief systems engineer for Commodore up until its demise at the end of April 1994. His video was filmed on the last day the Commodore facility at West Chester, Pennsylvania was open. Immediately after the closure, the film continues at a "Deathbed Vigil" party. Despite the unedited and amateur quality of this video, it is a "must see" for die-hard Amiga fans everywhere.

The people who made the Amiga computer a major passion in our lives are the stars of the show, and the stories they tell authentically document what it was like to work at Commodore during its heyday as well as at the end. They loved the Amiga even more than us — after all they designed it from its chips outward. People who don't know or care about the Amiga will probably not appreciate this film at all.

It is basically a two hour home movie. The medium, however, is well suited to the message. It's a thoroughly honest film, painfully so at times. Amiga users are really more of a family than anything else, and the home movie approach somehow works. It is sure to become a cult classic among Amiga fans. Just like our computer, it will be misunderstood by outsiders, but what else would we expect?

Beginning at the end

The movie opens with Dave's last drive to work at Commodore. He films the empty factory and wryly describes where the production lines were, the warehouse space was, where the engineers roller skated in the empty space until they put up a fence. Gradually you become aware that the last people here are the engineers, packing their things and talking and joking quietly about the end.

We even get to see some prototype AAA machines. I wanted to weep. They would have been available in 1993 if management had not halted AAA. "Design but don't build" was a catch phrase, as was "defeat snatched from the jaws of victory". The feelings are so heavy as reality sinks in that I found myself wondering how the unsung heroes of this story would ever get through it. The rest of the movie, in fact, documents in excruciating detail how the engineers and CATS people dealt with what the film describes as their "angst".

It seems that there were plenty of layoff parties for mitigating the pain of separation from work on what was an obsession rather than a computer. The Deathbed Vigil documents the last of these parties, where (to completely understate it) the engineers and technical staff bid farewell to Commodore and particularly to CEO Mehdi Ali.

The next to the last party is at a Margarita's restaurant, a Commodore hangout where more than several drinks have loosened tongues. Dave interviews his friends and former co-workers, asking them if they have any last words for Mehdi Ali. Some of the funniest lines in the film are here, but I'm sure they cannot be printed! Later, there is a party, an outdoor barbecue, with all sorts of lunacy and telling of tales. Every few minutes a printed screen comes up reminding us of what could have been, but wasn't because of (mis)management. Then, back to the party.

As the night and their creative imaginations heat up, we view the frenzied "smash the keyboards ritual"; the burning of "LBM" in effigy; the singing of impromptu computer ballads ("Oh what do I



"Where the heck am I gonna go? I guess I'll go call 3DO. Well, where the heck am I gonna go? I guess I'll go call 3DO. But y'know I just don't know how they're gonna pay their CEO. Well a billion to nothin' in just about three, it's that strange kinda genius that Mehdi Ali..."

Unemployment band featuring Mike Rivers singing 'Chicken Lips Blues' Dir: Fred Bowen in Deathbed Vigil and Other Tales of Digital Angst, a film by Dave Hayne."

do, now that my 8520's blown?"); the re-telling of the "Lemmings at DevCon" story; and the recitation of the salient details of the speed-bump war between engineering and facilities manager, Joe Mecca. The engineers also dealt with the absurdity of their situation by filling in property passes for 727 jet aircraft, painting managers' names on the speed bumps, painting the facilities manager's privileged parking spot as a handicap zone, issuing bogus memos, and otherwise making subtle and not so subtle war on management.

You'll hear it all, and even witness some of the pranks on video (no faces of course). Generally what we have here is creative subversion. What else is there to do when you're asked to design but don't build something you've given your all for (again and again)?

I've always thought that the Amiga is somehow a subversive computer, and now I know why: it must have been built in by its designers! I suppose it's knowing what a truly brilliant computer the Amiga is, that makes the film so fascinating, and the engineers' hijinks so poignant. Among high school students, they would have been merely silly; among such talented geniuses, the pranks stand out as defiant humor confronting creative despair.

The Deathbed Vigil documents a sometimes humorous, sometimes malicious struggle for individual and collective sanity among extremely talented people whose every creative idea was somehow misdirected or squelched by a crew of clueless managers and corporate philistines. These are our heroes, who created not just a computer, but a passion, a whole outlook on life. They came and slept under their desks at the plant and showered in the sinks in order to pursue their creative muses and produce something truly excellent. Throughout the hilarity you can feel their pain and frustration. They made computing history, yet they were ignored and ill treated to the last.

The Deathbed Vigil and Other Tales of Digital Angst is distributed by Intangible Assets Manufacturing, 828 Ormond Ave., Drexel Hill, PA 19026-2604, Tel: +1 610 853 4406, Fax: +1 610 853 3733. Cost for the regular issue is \$35. A limited edition of 100, numbered and signed by most of the Amiga engineers sells for \$75. Dale L. Larson, owner of IAM is a former network software engineer at Commodore. Inquiry #217

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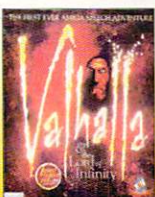
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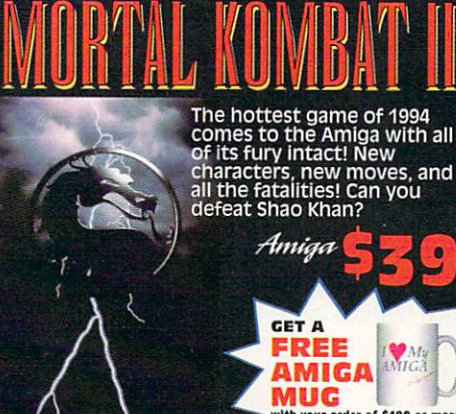
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Digital Sound Track

by R. Shamms Mortier

Visual Inspirations is creating a whole list of new utilities for the Amiga. All of its products, from Batch Factory and Transporter to Mail List Manager and this software, are designed with very similar interfaces, so that learning one gives you a jump on incorporating the others. Digital Sound Track is their entry into the Amiga audio end of the spectrum. The best way that I can describe DST (Digital Sound Track) is that it is the model of simplicity, from its screen design (which should take you about 10 minutes to master in detail) to its load/save attributes (which will add about another two minutes to your learning curve). However that very simplicity hides a wealth of useful productivity options beneath the interface's surface, all waiting to pop up and become a slave to your needs.

There are two main parts to DST, each with its own separate and dedicated section of the interface screen. The top of the screen shows ten rectangular areas, each targeted to one of the ten Amiga keyboard function keys. Ten separate samples (whose length is dependant only on your RAM capacity) are loaded into these boxes, representing instantly playable "macros" for the associated function key sounds. The associated sample's waveform appears in the box as well. From there, by depressing the actual function equivalent on the keyboard or by clicking the left mouse over one of the screen areas, you trigger the sound loaded into that area. Since the Amiga is able to play four sounds at the same time through its double stereo sound channels, you can get a whole circus of sounds layered upon each

other at the same time (as long as the samples are 130k or smaller).

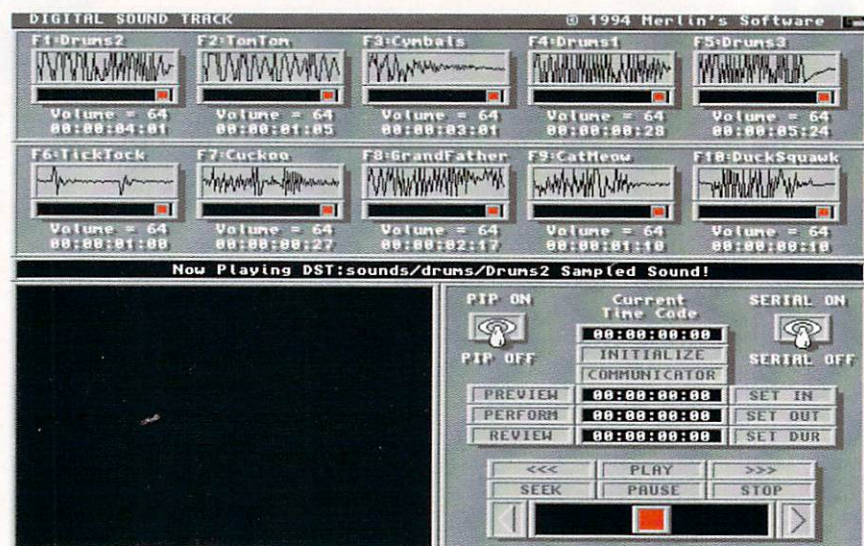
Below each sample area are two separate readouts. One is a volume readout (with a volume scale from 0 to 64) that can be altered by a movable slider beneath each panel. The second is a timing readout that tells you exactly (in hours, minutes, seconds, and frames) how "long" in SMPTE terms the sample is. Sounds can be looped by simply pressing the Shift key at the same time a sample is activated. DST plays sampled sounds and also SoundTracker/NoiseTracker/ProTracker MOD files. It's awesome hearing a crow sound its call into infinity with the looping function. Clicking once on the sample box ends the loop. Samples larger than 130k (like entire song tracks) can be faded out in four to five seconds by using the spacebar. This feature is wonderful for targeting simultaneous video fades. The ten sound boxes are arranged consecutively in stereo pairs, fostering stereo recording as well. Everything has been done to make the software as simple to use and as professionally useful as possible.

But that's literally only the half of it. The bottom half of the screen is dedicated to making the audio aspects of DST slave the videotape and associated visuals through serial port connection to a single frame recording device. If you've got the new OpalVision modules or own an IV24 from GVP, you can select to see a picture display of the running tape in the window reserved for it at the bottom left. This makes the neck craning usually associated with insert-sound

editing a thing of the past.

Two associated scripts are written to the S directory on your system's hard drive that allow DST to communicate with either board of these selected boards, and Visual Inspirations is busy at work adding other video boards as well. This PIP display is toggled on and off by an actual graphic of a toggle switch at the bottom right of the DST screen. Those working with non-Opal or IV24 systems can still use a monitor attached to the "out" of their recorders, until Visual Inspirations adds other choices.

DST is fully capable of interfacing with your recorder through the serial port. Another toggle switch initiates the connection, allowing you to have complete control over serial connected decks right from this software. The initialize command strings that interface with different decks are referenced in the manual. I use the Sanyo GVR-S 950, which is one of the listed decks the



Digital Sound Track's interface display is simple but very elegant, showing a Picture-In-Picture frame area from a video source on the lower left while at the same time keeping a loaded bank of ten separate sound samples ready for instant insertion into the soundtrack.

software supports. You can even bypass the DST software and talk directly to the deck using the "Communicator" button. Standard commands like Fast Forward, Rewind, Play, Pause, and Stop are supported. More esoteric commands suited to specific decks can also be typed in, referencing them in your user manual. SEEK allows you to type in the SMPTE reference code to access any point on the deck, and even the machine's JOG SHUTTLE can be controlled from the screen (forward or reverse)!

To top it all off, you can set the insert In, OUT, and (when necessary) DURATION points. You would only use DURATION if you were unsure of where to set the OUT point in an edit. A separate PREVIEW module allows you to practice your edit before committing to record it, while PERFORM sets the process in motion for real. REVIEW does an actual playback. A CONFIG file in your S directory can always be updated, so that the next time you use DST the same soundfiles will be automatically loaded in case your edit session is a long one or is interrupted.

New to version 1.2

There are much more editing capabilities with a script, so that sounds can be deftly tailored to your requirements. More adjustments have been added to address the PAR controller. Now you can load and save scripts, and most importantly, load and save lists of sounds. All sounds can now be flushed at one time. You may select to use an internal timer if desired instead of an external one. DST also allows you the use of a palette requester to change screen colors to your liking.

Conclusions

DST's manual is a short dozen pages, but no more is needed. A separate disk loaded to the brim with all sorts of sampled sounds accompanies the program. This is one of the sweetest utilities around for inserting sound over video, all the more so if you're a Sanyo GVR-S 950 owner like me. I tested the software on an Amiga 4000 with a Retina, so I had to use an extra monitor when testing edits. Flawless operation ensued. It would also be nice if it addressed other file formats (MIDI, SMUS, etc.) in the future, maybe with a direct link to the synth-on-a-card "One-Stop-Music-Shop" from Blue Ribbon SoundWorks.

My recommendation?

Buy this package now if you have needs that include audio insert editing, and get it yesterday if you have the OpalVision extra modules or the IV24 as well. If you just want to have a load of fun without thinking about professional applications, this software also fills the bill to a DS"T".

Digital Sound Track MSLP: \$99.95 Visual Inspirations 809 West Hollywood Tampa, FL 33604 (813) 935-6410 Voice & FAX Inquiry #203

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Beginning Assembly

Part 2—Power Play

by Bill Nee

Create an Assembly Program and understand how it works.

In the previous article I discussed general assembly language concepts. Now let's get specific and relate these ideas to the Amiga. The Amiga has several registers that store information, in fact, 16 of them; they are each 32-bit registers, or one long word. There are eight data registers, D0 to D7, and eight address registers, A0 to A7. Data registers are used mainly for math and Boolean operations and will handle bytes, words or long words. The address registers usually hold addresses or pointers to a location; A7 is also known as the stack pointer, or SP. Many instructions use the SP without you knowing it so it is a good idea to initially save the address in the SP and then forget about using it. Most math operations can be done using address registers but only with words or long words.

FLAGS

The other major register we'll use is the status register (SR) or, more accurately, it's lower eight bits, the control code register (CCR). Most commands and any operation using data registers affect the CCR - if the result is a positive or negative number, resulted in zero, etc. Different bits (called flags) within the CCR get set or cleared after most operations and other commands can be used to check these flags and act accordingly.

Assembly language uses a series of short word commands that the assembler converts to binary numbers for the computer. It's this direct conversion to numbers without having to read a Basic program, convert it to tokens and then convert them to computer operations that makes machine language so fast. The assembly commands are words or abbreviations; we'll learn a few of them in each article and you might want to keep a list of them in a notepad adding to it as we go along.

COMMAND LINES

Lines of assembly commands may contain three parts - a label, the command and a comment. The label is just a name you give to an address for easy reference. Most addresses need to be at an even location and divisible by 4; the assembler has built in code that will force this for you. Labels are optional in many cases but are required if other parts of the program refer to them. Try to make your labels as descriptive as possible.

The command is the heart of the program. It's always indented at least one space (I usually tab it). The command

word may include .B, .W or .L to indicate it is for a byte, word or long word. This may be followed by another space or tab and one or two (most often numbers or registers). If there are two operands the first is called the source and the second is the destination; usually the source is moved to, added to, subtracted from, etc. the destination. If there is only one operand it is considered to be the destination. As you'll soon see, some commands have different formats depending on what you use for the source and destination.

The last field, while not used by the assembler, is the comment field, again spaced or tabbed and usually prefixed with a semi-colon. I think it's always a good idea to add as many comments as possible; two months after you've written a program it will be hard to remember what all those code lines meant. And it's sure a lot easier for someone else to understand your program if it's well commented. The program you write is the source code and is usually saved with .ASM after the file name; the code generated by the assembler is the executable program and generally has no extension; some compilers, however, may add the extension .EXE after this program.

SOME COMMANDS

The most frequently used command is some variation of MOVE. MOVE is used to put a numerical value or the contents of one register into another register. This can be done at the .B, .W or .L level. Numbers are prefixed with a # if they are decimal, #\$ if they are HEX and #% if they are binary. MOVEQ is used to put an immediate signed eight-bit number (-128 to +127) only into a data register; the rest of the register is filled with the number's sign (0 or 1). MOVEA (.W or .L) moves the source to only an address register; this command will not affect any of the flags.

Closely associated with MOVE is the command LEA which loads an effective long word address into an address register; again, the flags will not be affected. If you wanted to put the address of the ARRAY1 location into register A5 you would use LEA ARRAY1,A5. This is the same as MOVEA.L #ARRAY1,A5 but using LEA results in shorter and quicker code. LEA can also be used to increase or decrease an address such as LEA 10(A5),A5 which would increase the address in A5 by 10; the # in front of the 10 is understood and omitted. Any register with parentheses around it means "the contents of".

Addition and subtraction can be done on either type of register using ADD or SUB. Variations of these commands are - ADDA (the destination must be an address register), ADDI (the source must be an immediate numerical value) and ADDQ (the source must be an immediate value between 1 and 8). The same variations apply to SUB. The two multiplication commands are MULS (multiply signed values) and MULU (multiply unsigned values). Both multiply a 16-bit value times a 16-bit value with a 32-bit result in the destination data register. The two division instructions are DIVS (divide signed values) and DIVU (divide unsigned values). Both divide a 32-bit value (destination) by a 16-bit divisor (source); the result is stored in the lower 16 bits of the destination data register and the remainder in the upper 16 bits.

BRANCHING

So far our commands have made the computer nothing more than a glorified adding machine, but with a branching capability, the computer begins to come alive. Since most operations, especially those using data registers, affect the CCR we can have the program branch to different locations if a result is 0 or not, positive, negative, or equal to another value. All of these variations are some form of branches. Branching can send the computer to a location plus or minus 32,768 bytes away from the branch; short branches (.S) can move plus or minus 127 bytes away. The three types of branches are -

SIGNED:

- BGE Branch if Greater or Equal
- BGT Branch if Greater Than
- BLE Branch if Less than or Equal
- BLT Branch if Less Than
- BNE Branch if Not Equal

UNSIGNED:

- BHI Branch if Higher
- BHS Branch if Higher or the Same
- BLO Branch if LOwer
- BLS Branch if Lower or the Same

MISCELLANEOUS:

- BEQ Branch if EQual
- BCC Branch if Carry Clear
- BCS Branch if Carry Set
- BMI Branch if MInus (negative)
- BPL Branch if PPlus (positive)

Closely associated with branches are the jump commands. JMP will move to any label or address (like Basic's GOTO) and JSR will go to a label or address, execute the routine there and then return to the current location on the program (like Basic's GOSUB...RETURN). JSR is used in all calls to library routines.

In addition to being able to branch or jump, two additional commands are useful. CMP will compare two operands and set the proper CCR flags so you can branch. The data in both operands remains untouched; only the flags change based on subtracting the source from the destination operand. You can compare numerical values to a register (CMPI) or compare a register to an address register (CMPA). Another command is TST. There is only one operand in this command and you can test an address or register to see if it's 0, plus or minus, and then branch accordingly.

STORAGE

Memory locations are the addresses of specific storage locations where you give the location a label name, reserve space for it, and maybe, assign it a starting value. Space for a single value is reserved at the end of the program using DC (Define Constant); you can reserve a byte, word, or long word (.B/.W/.L) and give it any starting value. For example, STACK DC.L 0 would reserve a long word space at a memory location called STACK with an initial value of 0. Remember that addresses should start at an even location divisible by four.

Now let's try assembling and running an actual program. Use ED, or some other type of word processor, to type Listing 1 exactly as is. Remember to indent or tab the commands followed by a space or tab and then the operands. The remarks are optional and are for your benefit. Save this listing as POWER.ASM. Get your assembler out and we'll assemble the listing. Since I'm using PHXASS the following instructions will apply to that assembler but will probably work on most others (A68K, etc.).

WRITING A PROGRAM

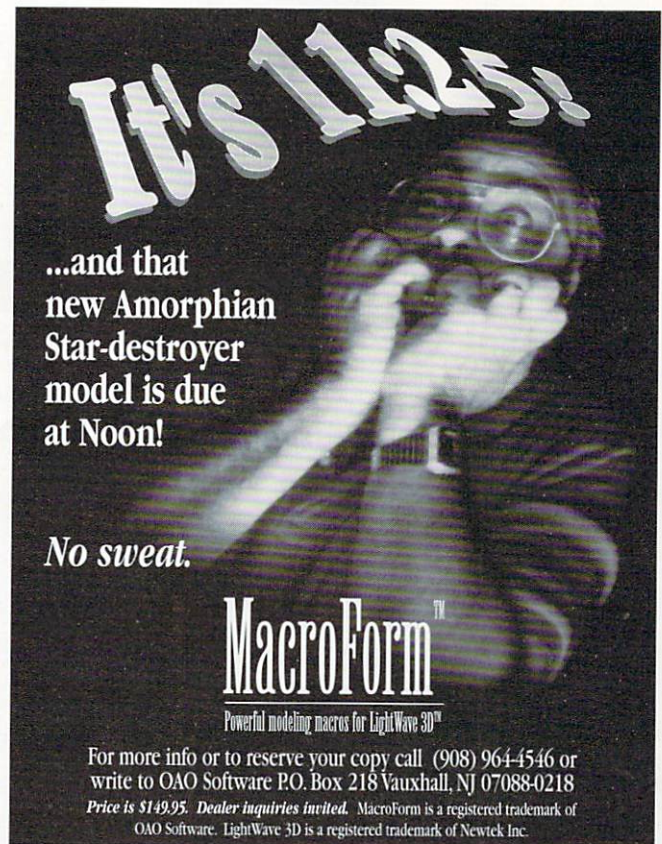
Let's review the program (Listing 1) and follow the command lines. The first line lets the assembler know that the following lines are source code. The address in the Stack Pointer (A7) is saved in memory location STACK. The number 6 is stored in register D1 as a counter. Amiga address \$BFE001 affects, among other things, the power light. When bit1 is set the light is off, and when it's 0 the light is on. If we OR this location with 00000010 (#2) we'll set bit1 not changing any other bit. Then put a 0 in D0 and keep subtracting 1 from it, branching back to label DELAY1 until D0 is again 0; repeat this process for DELAY2.

Now AND the same memory location with 11111101 (#253); this will force bit1 to 0 and keep the other bits unchanged. Repeat the procedure for the two delays then decrease D1 by 1. If it's not 0 we haven't repeated the entire procedure 6 times so it's back to POWER_OFF. When we have completed 6 blinks, restore the stack pointer to the SP. RTS is a command to return to where you were, in this case probably CLI. The EVEN command is a PHXASS assembler command that forces the address for STACK to be at an even numbered word-aligned location. Finally, END lets the assembler know that this is the end of your program, there is no more data or code.

ASSEMBLY

Type PHXASS POWER.ASM; the assembler will run for a few seconds then let you know how many lines of code and the number of bytes that are in the assembled program. The file produced is POWER.O and must be linked to any outside or include files, so now type PHXLNK POWER.O. This will rapidly link your program and produce the listing POWER, the executable program. If there are any mistakes in the listing the assembler will tell you the line number and error; it won't tell you if the program will run or crash - only if it's written in an acceptable manner. Run the program POWER and you'll see your power light blink on and off six times.

Congratulations - you've completed a successful assembly language program. Try changing the delay values and see what difference that makes. If you want to see a listing of the assembled program, type PHXASS POWER.ASM -L, then use MORE or ED to read the listing and see the actual code numbers; try to relate them to the numbers in the source code. You'll notice that PHXASS has optimized your code by 12 bytes. Based on previous information discussed, can you figure out where 10 of these bytes came from and how to improve the source code? Next time I'll discuss the PHXASS assembler in more detail, we'll open some libraries and print their locations.



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Listing 1 - POWER.ASM

```

section text,code ;for the PHXASS assembler
start:
move.l sp,stack ;save the Stack Pointer
number_of_times
moveq #6,d1 ;# of times to blink
power_off
ori.b #00000010,$bfe001 ;set bit1
moveq #0,d0 ;clear d0
delay1
subq.w #1,d0 ;decrease d0 by 1
bne delay1 ;branch if not 0
delay2
subq.w #1,d0
bne delay2
power_on
andi.b #11111101,$bfe001 ;clear bit1
moveq #0,d0 ;reset delay counter
delay3
subq.w #1,d0
bne delay3
delay4
subq.w #1,d0
bne delay4

subq.w #1,d1 ;one less blink
bne power_off ;repeat if not 0
movea.l stack,sp ;restore the Stack Pointer
rts ;return to CLI
even ;force to an even address
stack dc.l 0 ;reserve a long word
end ;end of program

```

•AC•

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Use HELM To Create An *Animated* Five-Day Weather Forecast

by Randy Finch

In the November issue of *Amazing Computing* (9.11), I explained how to create an animated five-day weather forecast using DeluxePaint IV. As I pointed out in that article, some of the tasks are quite tedious, especially the placing of the high and low temperature text for each day. In this article, I show you how to make these tasks easier by using HELM.

The book I created is entitled 5DayForecast. It consists of two pages. Page one is the animated forecast screen (Figure 1). Page two is used for entering information about the forecast screen (Figure 2). Let's take a look at page one first.

The Five-Day Forecast Screen

This screen is a low-resolution interlaced screen with maximum overscan. This can be set in the Display requester which can be accessed via the Author/Display menu item. You may recall that this resolution is what was used in DeluxePaint to create the five-day forecast template. In fact, page one of the HELM book uses that very template. To add the template image to the page, create a linked imagefield that covers the entire page. A linked imagefield is created by clicking on the imagefield tool, in the Draw Tools window, with the right mouse button and selecting Link from the pop-up menu. After drawing a rectangle covering the entire page, a requester will prompt you for the name of a graphic file to link to the imagefield. Once the link is made, the image will always load into the imagefield whenever the page is displayed.

There are several other objects on the page in addition to the full-page imagefield. There are five textfield objects located in the light blue bar under the title, each centered above the five rectangles containing the AnimBrushes. These hold the names of the days. The background color of these textfields is set to the same light blue as the bar, and

the border option is set to none. Therefore, if no text is in these fields, you cannot even tell they exist. The text justification for these textfields is set to Centered so the day names will be centered above the AnimBrushes. The font used for these textfields is CGTimes 30.

The ten boxes at the bottom of the template are also covered with "invisible" textfield objects. The color, border, and justification for each is set similarly to the day name fields described above. The font used in these textfields is CGTriumviate Bold 30. You may find it useful to create just one textfield first, change its properties, and then use the Object/Duplicate feature of HELM (Figure 3).

Centered in the five rectangles in the middle of the template are five non-linked imagefields of size 50x183, which you may recall was the size of the AnimBrushes created in DeluxePaint. The speed of each imagefield is set to 20 frames per second. This is done by selecting the Image/Info menu item and setting the Time per Frame to 3. Each time period is one-sixtieth of a second. Also, for the AnimBrushes to actually animate, the Animating Frames and Lock Image options need to be turned on.

Again, create one imagefield, set its properties, and then duplicate it. Be aware that DeluxePaint IV does not save a frame rate with AnimBrushes. HELM, however, does. Since there is no way in the version of HELM I am currently using (v1.56) to set the frame rate of an AnimBrush from a script, the frame rate must be set manually each time an AnimBrush is loaded. This is



Figure 1. 5-Day Forecast Screen

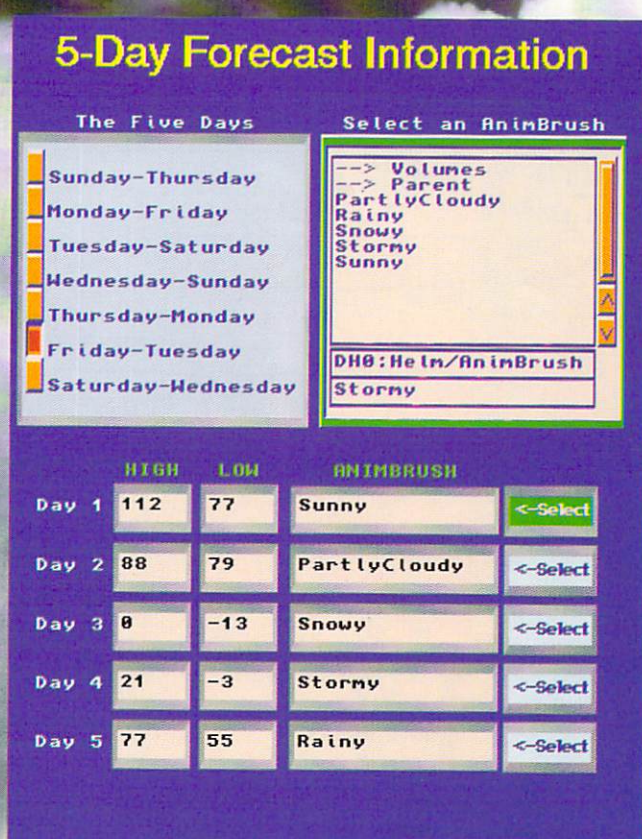


Figure 2. 5-Day Information Screen

cumbersome. I ended up loading the AnimBrushes into an imagefield, changing their frame rates, and then saving them. The newly saved AnimBrushes will load and run at the appropriate frame rate. There was one interesting side effect to this process: the AnimBrush files were smaller than the original ones saved from DeluxePaint by about 1-2 KB.

At this point, 5DayForecast is a rather functional program. The day names can be typed into the five textfields, as can the high and low temperatures. The font will already be set and the text will be automatically centered. Finally, the appropriate AnimBrushes can be loaded into the imagefields by selecting each field in turn, choosing the Image/Load menu item, and selecting the AnimBrush to load. The Image menu will be ghosted if the imagefield is locked.

Therefore, before selecting an imagefield, choose the Edit/Unlock All menu item. This will unlock all locked objects on the page. After loading the five AnimBrushes, choose the Edit/Unlock All menu item once again to re-lock the objects. Now the Browse Tool button in the Draw Tools window can be pressed to start the animation.

Even though this five-day animated forecast is easier to use than the one using DeluxePaint, there are still a few things that can be made easier. This is where the information screen on page two of the HELM book comes in. Let's take a closer look at it.

The Five-Day Forecast Information Screen

This page (Figure 2) has objects allowing you to enter all the information needed by the template screen (Figure 1). There is a radio buttons selector with a list of items (Figure 4) in the upper left corner of the page allowing you to easily select which of the seven sets of five consecutive days you are forecasting. There is a file selector in the upper right corner for selecting AnimBrush files. There are 15 textfields at the bottom of the screen for entering the five high temperatures, the five low temperatures, and the five AnimBrushes to use for the forecast.

The five objects to the right of the AnimBrush textfields are grouped, mutually exclusive, toggle select push buttons.

Even though this five-day animated forecast is easier to use than the one using DeluxePaint, there are still a few things that can be made easier.

When one button is pressed, it will be highlighted while the one that is currently selected will have its highlighting removed. When a file is selected from the file selector, its name will be inserted into the AnimBrush textfield to the left of the currently highlighted "<-Select" button. These

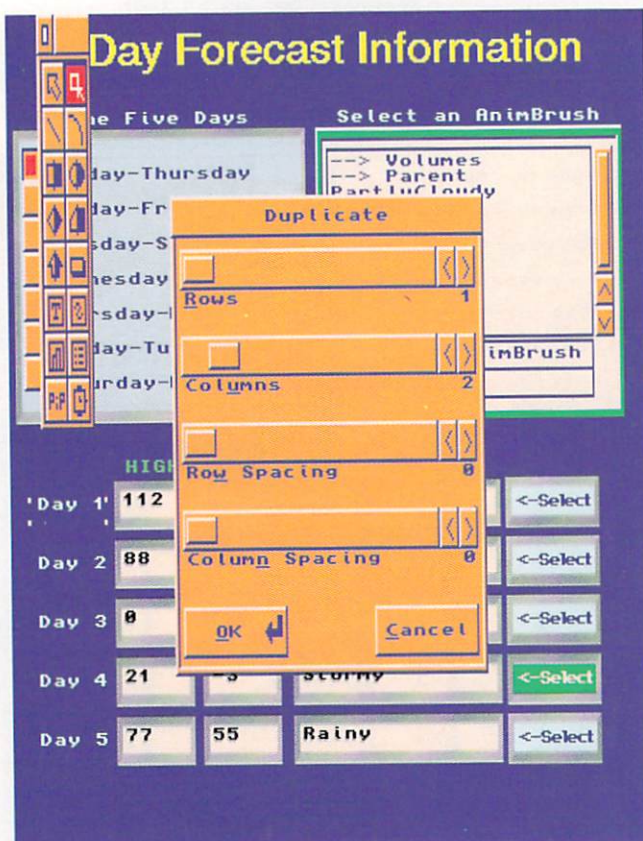


Figure 3. The Duplicate Requester

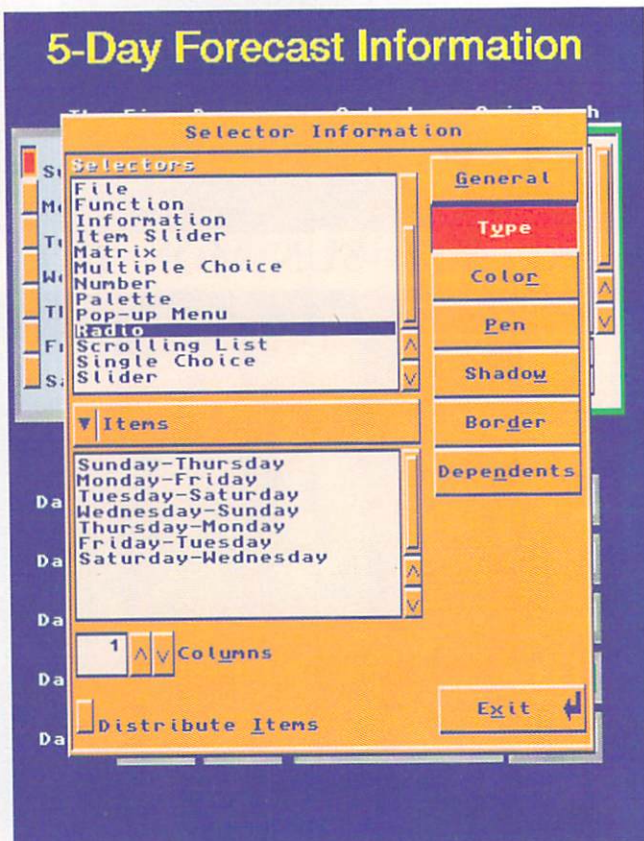


Figure 4. Radio Buttons Information

toggled, mutually exclusive buttons are actually five individual buttons that have been grouped by selecting all of them simultaneously and then selecting the Object/Group menu item. The Exclude Group and Toggle Select items in the Highlight Button Information requester are checked for each button (Figure 5).

The remaining objects on the page are locked textfields. They include the title at the top of the page, the "Day 1" through "Day 5" labels to the left of the high temperature textfields, and the "High", "Low", and "AnimBrush" labels above the lower group of textfields. It is important that these textfields be locked because after entering text in a textfield, HELM automatically places the cursor in the next available textfield. Since these labels do not need to be edited, the cursor should never jump to them. HELM bypasses locked textfields when repositioning the cursor. The labels above the radio buttons selector and the file selector are the names of the selectors. An object name can be displayed by turning on the Caption option for the object (Figure 6).

With the interface built, it is time to add functionality to the book. The tasks to be accomplished by this book are too complicated for Actions to perform. Therefore, Scripts are needed.

The PageOpen Script for Page Two

Most of the program action occurs on page two, which is the forecast information screen. When this page first opens, its PageOpen script executes (Listing 1). This script

can be edited by going to page two and selecting the Author/Page menu item. Select the Script button when the requester appears. The PageOpen script does only one thing: it issues a Click On command. This command simulates the user clicking on an object on the page. In this case, button id 36 is clicked. This is the top "<-Select" button to the right of the day one AnimBrush filename textfield.

This action initializes the group of toggled, mutually exclusive buttons. I used the ID of the button rather than its name because the name for all five of these buttons is the same: "<-Select". They had to be named the same because the name is what appears on the button, and the text on all five buttons needed to be the same.

The SelectDown Script for the <-Select Buttons

The SelectDown script for button id 36 is shown in Listing 2. It assigns a string value of Day1AnimBrush to the global container DayField. Day1AnimBrush is the name of the textfield containing the AnimBrush name for day one of the forecast. There are similar scripts for each of the other "<-Select" buttons, assigning DayField a value of Day2AnimBrush, Day3AnimBrush, and so on.

Be sure to use a SelectDown script for these buttons rather than a SelectUp because the toggling occurs on a SelectDown. If a SelectUp script is used, it is possible for the user to click on one of the buttons and move off of it before releasing the mouse button. In this case, the highlighted button will be mismatched with the AnimBrush textfield name in DayField.

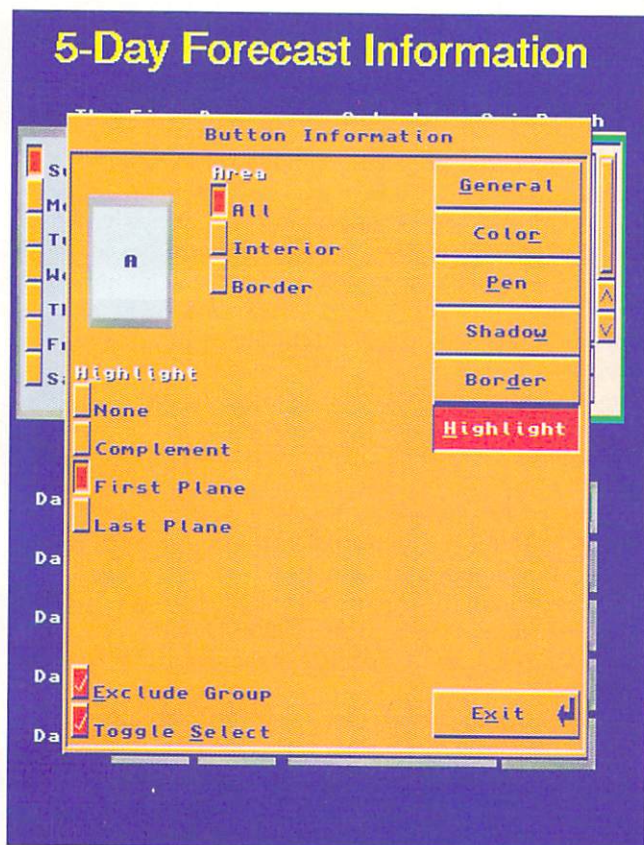


Figure 5. Exclude and Toggle Select

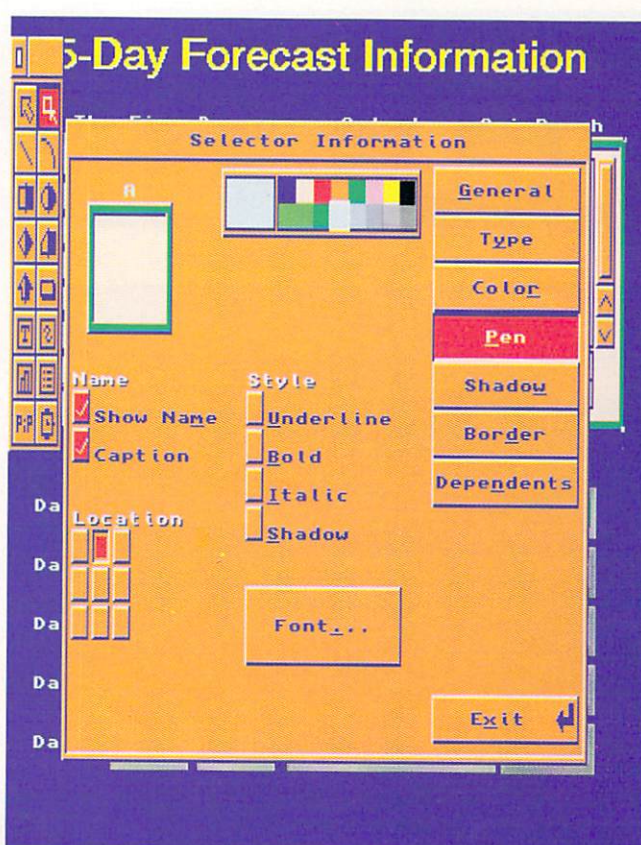


Figure 6. Caption Settings

The SelectUp Script for the File Selector

The SelectUp script for the file selector, named "Select an AnimBrush", is shown in Listing 3. It simply extracts the filename portion of the path and filename combination returned by the file selector and puts it in the textfield referenced by the global container DayField. Notice that the file selector is referenced by the name "me". This name can be used by any script to refer to the object to which the script is attached.

The PageClose Script for Page Two

Once all the information has been entered on page two, the Go/Next Page menu item can be selected to go to the forecast screen. At this point, the PageClose script for page two will execute (Listing 1). This script is the heart of the book. It extracts the path from the file selector and puts it in a global container named BrushDir. It then extracts the names of the five AnimBrushes to be used by the forecast screen and puts them into five appropriately named global containers. The six global string containers assigned here are used by the PageOpen script of page one.

Next, a string array named NameOfDays is created containing the seven three-letter abbreviations for the days of the week. This will be used in the upcoming loop.

Before the loop, the CurDay container is initialized with the value of the radio button selector, named "The Five Days", plus one. The radio button selector, having seven items, returns a value ranging from 0 to 6, depending on the currently selected item. This number will determine which

day is the first in the forecast. However, since the day abbreviation items in the NameOfDays array are numbered 1 through 7, a one must be added to the value returned by the radio buttons selector.

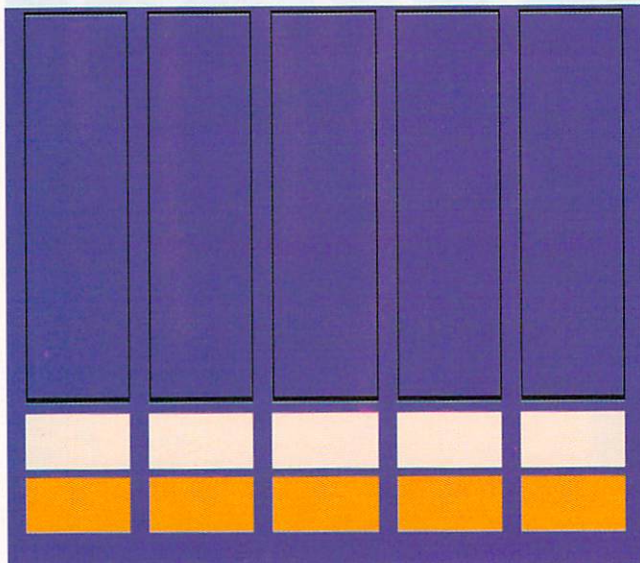
Now a loop executes, with the value of *i* starting at 1 and ending at 5. The string containers FirstName and SecondName are filled with the names of the appropriate high and low temperature textfields, the first of which are named Day1High and Day1Low. String concatenation is used to build these names. The number in container *i* (e.g. 1) is automatically converted to a string (e.g. "1") when performing the concatenation. Next, the strings in the textfields represented by the FirstName and SecondName containers are inserted into textfields by the same name on page one. These latter textfields reside on the colored rectangles at the bottom of the forecast screen.

Next, the appropriate three-letter day name abbreviation is extracted from NameOfDays and put into the appropriate textfield on page one. The textfields DayName1 through DayName5 are centered above the five rectangles containing the AnimBrushes on the forecast screen. Make sure the parentheses are around the expression "DayName"&*i* because the textfield operator has precedence over the & operator. Without the parentheses, HELM will try to concatenate *i* to the value of the textfield DayName. Since this textfield does not exist, an error will occur during execution.

Finally, the value of CurDay is updated for the next pass through the loop. The modulo operator (%) causes the

15 NEWS

5-Day Forecast



value of the expression `CurDay%7+1` to increase to seven and then loop back to one. This will prevent an attempt to access an item in `NameOfDays` that does not exist.

The PageOpen Script for Page One

The `PageOpen` script for page one executes when the page is activated. It is shown in Listing 4. It simply combines the directory name stored earlier in the global container `BrushDir` with each of the five `AnimBrush` names and then loads the `AnimBrushes` into the appropriate imagefields. The display is locked before doing this so that the `AnimBrushes` do not begin animating until they are all loaded. The display is unlocked before the script ends. If the display is not locked first, the imagefields will begin animating and then, one by one, they will be replaced with the new `AnimBrushes`.

Complaint Department

The `5DayForecast` book works very nicely, but I did get a few headaches putting it together. I am currently using version 1.56 of HELM. Some of the problems I encountered are supposed to be remedied in version 1.61, the latest as of this writing. This version is in the mail, but I did not receive it in time for testing before submitting this article.

One problem I encountered was innocuous but annoying. After modifying the script for page two and then executing the book, the appropriate `AnimBrushes` would not load into the imagefields on page one. However, the day names and temperatures were inserted properly. When I went back to page two and then immediately back to page one, all worked well. Something is not executing properly

the first time page one is activated after a page script change. This is supposed to be corrected in v1.61.

Occasionally, the file requester returned a long integer rather than a path and filename. This is supposed to be corrected in v1.61.

At first I tried to load the `AnimBrushes` into the imagefields on page one from the `PageClose` script of page two. This does not work. Apparently, imagefields have to be loaded after the page containing them becomes active.

If the combination of resolution, size, and frame rate of `AnimBrushes` on a page exceed some critical value, all user control of the program ends. HELM apparently gives precedence to the animating of the images. When this situation occurs, all that can be done is to re-boot.

HELM crashed a few times, but not many. Generally, they occurred when chip memory was low. One crash was particularly interesting. The animated startup screen asking me to insert the Workbench diskette appeared. I have a hard disk and NEVER insert a Workbench disk. A three-finger salute returned things to normal.

After printing a script from within the script editor, the clock pointer does not go away even when control is returned to the user. To clear it, exit the script and then re-enter it.

If a locked imagefield is selected, the Image menu is ghosted. After selecting the `Edit/Unlock All` menu item, the Image menu is still ghosted even though the imagefield is still selected. The imagefield must be selected again after unlocking it for the Image menu to appear normally.

Needful Things

I sure wish that the name and the label of an object were not one and the same thing. Sometimes the label for different objects need to be the same, but their names different.

I wish there was a way to set the frame rate of an `AnimBrush` with a script command. This would allow the rate to be set at run time rather than at design time. I believe version 1.61 has this feature added.

There needs to be more flexibility in selecting border colors for objects. Currently, a border can only use consecutive colors in the palette.

One much needed feature is the ability to change the common properties of multiple objects simultaneously. Currently, the best way to give objects common properties is to create one object, set its properties, and then duplicate it. However, this only works for the same type of objects, not different objects. Also, there are many times when the properties of a group of objects are initially set incorrectly and then need to be changed later. This feature is supposed to be in HELM version 2.0, but I do not know when that version will be available.

Good Things

Even with the problems I have listed, HELM is still a great product. There are so many features in this software, it is hard to believe that it is the work of essentially one programmer. Eagle Tree Software is very good about listening to user complaints and addressing them in future releases.

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Listing 1

Script for Information Screen (Page 2)

```

on PageOpen
begin

    ' Activate default Select button
    click on button id 36

end

on PageClose
begin
    global BrushDir, Day1ABr, Day2ABr, Day3ABr, Day4ABr, Day5ABr

    ' Put directory and filenames into global variables for use by page 1
    put strdir(object "Select an AnimBrush") into BrushDir
    put textfield "Day1AnimBrush" into Day1ABr
    put textfield "Day2AnimBrush" into Day2ABr
    put textfield "Day3AnimBrush" into Day3ABr
    put textfield "Day4AnimBrush" into Day4ABr
    put textfield "Day5AnimBrush" into Day5ABr

    'Create an array of day names
    put "SUN, MON, TUE, WED, THU, FRI, SAT" into NameOfDays

    'Initialize current day - add one because selector returns 0-6
    put (selector "The Five Days")+1 into CurDay

    'Loop 5 times, inserting day names, and high and low temps on page 1
    for i = 1 to 5 begin
        put "Day"&i&"High" into FirstName
        put "Day"&i&"Low" into SecondName
        put textfield FirstName into textfield FirstName of page 1
        put textfield SecondName into textfield SecondName of page 1
        put item CurDay of NameOfDays into textfield ("DayName"&i) of page 1
        put CurDay%7+1 into CurDay
    end
end
end
  
```

Listing 2

Script for First Select Button (Page 2)

```

on SelectDown
begin

    global DayField

    DayField = "Day1AnimBrush"

end
  
```

Listing 3

Script for File Selector (Page 2)

```

on SelectUp
begin

    global DayField

    put strfile(me) into textfield DayField

end
  
```

Listing 4

Script for 5-Day Forecast Screen (Page 1)

```

on PageOpen
begin

    global BrushDir, Day1ABr, Day2ABr, Day3ABr, Day4ABr, Day5ABr

    ' Lock the display while loading the AnimBrushes into imagefields
    lock display
    load image BrushDir & Day1ABr into object "Day1"
    load image BrushDir & Day2ABr into object "Day2"
    load image BrushDir & Day3ABr into object "Day3"
    load image BrushDir & Day4ABr into object "Day4"
    load image BrushDir & Day5ABr into object "Day5"
    unlock display

end
  
```

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Using ARexx Time and Date Functions

by Merrill Callaway

When I was a child, my Grandmother used to fascinate me with a computational trick: She knew how to figure in her head in just a few seconds what day of the week any given day-month-year date would fall. I never did figure out her method, but thanks to ARexx, we need never worry about computing time, days, and dates. ARexx has a full set of functions to make it easy to figure out all sorts of problems involving day of the week, time or dates. This month's programs are two that I made after a couple of embarrassing or expensive calls to my mates Down Under in Australia. Because of the time and day differences, I found that I either woke a friend late at night or rang a business outside office hours.

What Time is It?

World timekeeping is based upon the offset behind or ahead of Greenwich Mean Time, (GMT) the time at 0 degrees longitude in Greenwich, England. The Pacific coast of the USA, for example, is eight hours behind GMT and the Atlantic coast is only five hours behind GMT. I live in the Mountain Time Zone and my offset is 7 hours. You can find any time in the world with your Amiga, if your System includes Locale. Open Prefs in your System Directory and click on Locale to get a World map showing time offsets

What about Daylight Savings Time? What about Daylight Time in Australia? Aren't their seasons reversed from ours?

Does your long distance carrier have discount rates to foreign countries?

from GMT. Click anywhere to see the local time's offset from GMT. Try clicking on Newfoundland, Canada or on central Australia. These times are offset by 30 minutes, not whole hours. Can you find others? You may think, "All I have to do is add up the offsets of here and there (Australia for instance), to get the time difference."

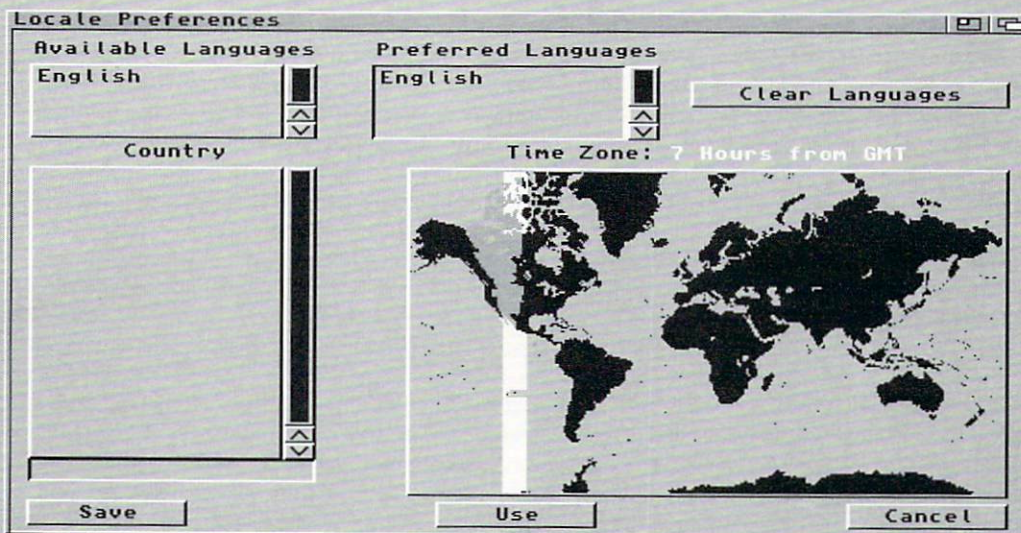
While the problem is not too difficult, it is not quite as easy as that. What about Daylight Savings Time? What about Daylight Time in Australia? Aren't their seasons

reversed from ours? Does your long distance carrier have discount rates to foreign countries? They usually put in a few discount hours that coincide with a few business hours where you are calling. Our programs will address these questions. If you don't have a mate in Sydney, Australia, or don't live in my time zone, the program is easily adapted for anywhere else in the world. As an exercise, you may want to dress up the program so that there is opportunity for the user to input any locale (such as large cities around the world) and let the program take care of everything else.

The Computations

Prefs/Locale shows that MST (Mountain Standard Time) is offset 7 hours from GMT. Sydney, Australia is 10 hours ahead of GMT. In summer, MDT (Mountain Daylight Time) puts the clock ahead one hour, reducing the local time offset to 6 hours behind GMT. For Daylight Savings Time move your locale offset number one hour to the right (east) and going back to regular time use the given number (Spring Ahead, Fall Back). Moving to the right will decrease your offset if you are west of GMT and increase it if you are east of GMT. The International Date Line divides "east" from "west" (see below). Thus MST is 7 hours and MDT is 6 hours behind GMT.

Sydney's standard (winter) time is GMT plus 10. Since they are having WINTER when we are having summer (and daylight time), the proper calculation for Sydney is 16 hours ahead of MDT. In winter, MST is 7 hours behind GMT, but Sydney has moved into SUMMER down under and their offset moves to the right one hour (11 hours ahead of GMT). So in my winter, I must add 18 hours to my time to get the local time in Sydney. For destinations in the Northern Hemisphere, of course you do not need to change offsets as they will be in step year round.



What Day Is It?

In the Pacific Ocean east of New Zealand is the International Date Line, a line along 180 degrees longitude, except where it veers so as not to bisect countries. Just to the west of the line, time is deemed to be 12 hours ahead of GMT and just to the east of the line time is 12 hours behind GMT. In other words, the date changes abruptly from Monday east of the line to Tuesday west of it. (Flying back from Sydney, you arrive in Los Angeles two hours before you left Sydney!)

The program needs to figure the day as well. Long distance rates may be very low on Sunday but you can make a Sunday business call across the Date Line to Monday in the Pacific Rim. The program should allow for that possibility. Conversely, if you dial across the Date Line on a Friday to a Saturday, or on a Saturday to a Sunday, you run an increasing risk of a business being closed. The program should also be adaptable to personal calls, so we will make computing business hours a user specified option.

AUSTIME.REXX

This program allows the user to choose System time (by pressing [Enter] at the prompt), or to input an hour in HH format. I chose to use Military or 24 hour time to eliminate AM and PM. After you input a time here, the program displays a line telling you what time you chose here and

what time/day that corresponds to in Sydney. If you enter your own hour, HH, then the program will display "today" for here and either "today" or "tomorrow" for Sydney, depending on the input hour. If you input 0 or 24, the program will display "midnight" here and "same day" for Sydney. If you choose System time by entering a null string, the program will display hours minutes and seconds, and the actual day here, such as "Wednesday", but other output is the same.

The first thing after the obligatory comment is the use of the DATE() function without arguments. This returns a string in the form:

DD MMM YYYY

The default for the DATE() function is as if a NORMAL argument had been specified (e.g. it returns a string such as: 25 DEC 1994). Next the program parses the variable, datenow, into day, month and year with target variables so named. To compute leap years, leap is set to equal 0 initially. The remainder (//) operator divides the current year by 4, and returns the remainder. If the result is zero, then we have a leap year and set leap=1 representing one day at the end of February. DATE(d) returns the ordinal day of the year, and that is assigned to daynow.

The next IF clause tests to see if Daylight Savings Time is in effect. MDT starts on day 92 (93 in leap years) or April 30th. Conversely, October 30th, or day 303 (304 in a leap

year) is the day for returning to Standard Time. The IF statement says, "IF we are in daylight time, THEN the number of hours to add=16; ELSE add=18." ELSE takes care of the rest of the year, on Standard Time. *Editor's Note: Daylight Savings Time in the US now starts on the first Sunday in April and ends on the last Sunday of October—please adjust your programs accordingly.*

After a prompt for user input, the program PULLs timenow, (assigns the user input to the token, timenow). The two parse statements get rid of any punctuation in the input such as "hours:minutes" or some such pattern. Parsing on a pattern throws out the pattern string, and only keeps the first part of the string up to the pattern. You may also want to add code to warn the user if input is not in the range 0 to 24.

If nothing is entered, the program gets the System time with a TIME() function, similar to DATE() except that its NORMAL option is a string with format

HH:MM:SS

The token, daynow, is set to DATE(w) or the day of the week, spelled out.

The ELSE clause covers the case where the user has supplied an arbitrary time of day to convert. In that case daynow is set to "today". The next clause tests for midnight, and assigns "midnight" to daynow. Next, we need to format the resulting number. FORMAT() is a built-in function of SAA (IBM standard) REXX, but NOT of ARExx. I chose to make an internal function by that name, because I originally wrote the program in OS/2 REXX where FORMAT() is available. It was a simple matter to write an internal function that takes the same arguments, even if it doesn't actually do what the REXX FORMAT() does.

I mention this to point out that the "same" language is not always immediately portable between platforms. Let's hope Bill Hawes makes the next version of ARExx follow ANSI and SAA REXX standards in the interests of portability, communicating with other platforms in networks and so on. ARExx is not exactly a superset of REXX, because it is missing some of the SAA REXX standard functions. Input/output must of course be platform dependent, but as much standardization as possible should be a priority.

The internal FORMAT() function takes three arguments separated by commas, just like the standard REXX function, but it does not do everything the original does. Note the way the function is defined to be a PROCEDURE so that variables will be completely separate and protected. Also note the way the argument list is passed in order. The first argument (the result of the first expression up to the first comma) is placed into "num", followed by a 2 placed into "before" and a 2 placed into "after". The RIGHT function pads the hour to the left with 0's, so that "1" will come out "01" and so on. Double digit numbers will not be affected. Next a colon (:) is placed to the right of the number and two 0's added using the function, COPIES(string,number), where (string) is copied (number) times.

For our purposes, we do not need anything so fancy, but it illustrates how to make this function mimic the template of the original FORMAT() which has arguments for the number of digits "before" and "after" the decimal

point (which we have replaced with a colon). Finally FORMAT() returns the number "2" formatted as "02:00" for 2 AM, to complete the IF THEN ELSE block.

The next line,

PARSE VAR timenow hours +2 minutes +3 seconds

uses relative positions instead of patterns to divide (parse) the string represented by timenow and does not remove the colons (:). It counts the positions in the string HH:MM:SS as follows: first 2 positions; next three; the rest of the string. Absolute positions 3 and 6 could also have been used in our template instead of relative positions +2 and +3. Just divide the string into hours="HH" minutes=":MM" and seconds=":SS". These will be concatenated to the answer at the end.

Another IF THEN ELSE construction tests for whether it is tomorrow or today in Sydney. Hours+add (the time in hours here, plus either 16 or 18) is tested to see if it is more than 24 (midnight). If it is not, then daythere="today"; and if it is, then daythere="tomorrow". I also added a specific test for midnight in each block to make daythere="same day". The remainder operator (/) is invoked to restrict the range of the result of hours+add. A clock's hour must be between 1 and 24. A clock is an analog of what is called modular arithmetic. When we get to 24 we begin counting at 1 and not 25. We say 1 is congruent to 25 mod 24. 1 is the remainder after division by an integer, 24. AM/PM clocks count time modulo 12.

Before output, the result needs to be formatted by the format procedure only if the user has input a number. Testing minutes for null is sufficient to determine this. When parse could not assign a value to the target, minutes, it was assigned the null string. The output creates an expression with all the relevant strings concatenated with quoted literal strings (string tokens). The result is displayed with SAY.

AUSTIME2.REXX

The second program is a variation on the first. It demonstrates how to add help to mimic the behavior of AmigaDOS commands. If you enter at the prompt

RX AUSTIME2 ?

then the lines of help are displayed just like in AmigaDOS. Parse Arg finds the question mark if it is an argument. This technique is handy for displaying operating instructions or a template.

Users are asked if they want a list restricted to Sydney business hours. A non-Yes simply displays a table of all discount calling times for today. In both cases MCI Call Pacific discounts times are hard coded. It's cheap to call only after ten at night and before 2 PM the next day, and all 24 hours on Saturday and Sunday. The tables do not include any of the expensive times. If I wanted a program to include Call Europe with different discount times, I would make a new program and call it EURTIME2.REXX. Then I might make a handler program to call either AUSTIME2.REXX or EURTIME2.REXX as external functions depending on user input. This way my programs remain small and modular, easy to change or debug.

Logic to use the actual day of the week for "today" and "tomorrow" occupies the SELECT block. A variable, weekend, is set according to whether it's a good day, a bad day, or a maybe day over there with respect to calling during business hours. A DO loop lists all the hours depending upon whether they are discount AND business, or just discount. Three messages are output according to whether System time is in or near the weekend. Good business hours are deemed to be 8:00 to 17:00 Monday through Friday. Saturday displays a caution message with the same hours. A simple IF test restricts output to business hours only if a boolean token, biz, is set to 1 after the user answers Y or yes. Note the way to use the ABBREV() function to accept all variations of "yes". It merely looks for the first letter, "Y". PULL insures the user response is in upper case.

You could adapt this program to fax or download/upload at appropriate hours from an AREXX capable fax or terminal program, or you could adapt my program to keep track of what time it is anywhere in the world.

AUSTIME.REXX

```

/* AUSTIME.REXX Convert to time in Australia NSW */
/* Copyright 1994 by Merrill Callaway */

datenow=DATE()
PARSE VAR datenow day month year
leap=0
IF year//4=0 THEN leap=1
daynow=DATE(d)
IF (daynow>93+leap) & (daynow< 303 + leap) THEN add=16
ELSE add=18
SAY 'Input time of day here. hh [Enter]=time now.'
PULL timenow
PARSE VAR timenow timenow ':'
PARSE VAR timenow timenow '.'

IF timenow= '' THEN DO
    timenow=time()
    daynow=DATE(w)
END
ELSE DO
    daynow='today'
    IF timenow=0 | timenow=24 THEN daynow='midnight'
    timenow=format(timenow,2,2)
END

PARSE VAR timenow hours +2 minutes +3 seconds
IF hours+add<24 THEN DO
    hoursthere=hours+add
    daythere='today.'
    IF timenow='00:00' THEN daythere='same day.'
END
ELSE DO
    hoursthere=(hours+add)//24
    daythere='tomorrow.'
    IF timenow='24:00' THEN daythere='same day.'
END

IF minutes = '' THEN hoursthere=FORMAT(hoursthere,2,2)
SAY 'Here: 'timenow daynow'. ==> Australia: 'hoursthere||minutes||seconds
daythere
EXIT

format: PROCEDURE
PARSE ARG num, before, after
num=RIGHT(num,before,0)
num=num||':COPIES('0',after)
RETURN num

```

AUSTIME2.REXX

```

/* AUSTIME2.REXX Convert to time in Australia NSW */
/* Copyright 1994 & 1995 by Merrill Callaway */
PARSE ARG help
IF help = '?' THEN DO
    say 'AustTime2 copyright 1994 by Merrill Callaway'
    say 'Program outputs table of times in Mountain Time'

```

```

say 'with corresponding time/day in Sydney, Australia.'
say 'Automatic seasonal adjustments for Daylight Time here/there.'
say 'Shows only those times of day that MCI International'
say 'calling service is discounted (from America).'
say 'If "Y" or "yes" is given for Business Hours?'
say 'Then only those times in Sydney are displayed that'
say 'fall between 8 AM and 5 PM Sydney time, on a business day.'
say 'Adjusts for business hours when calling from USA on Friday-
Sunday.'
say 'shows more business hours there on Monday if calling on Sunday.'
say 'Calling on Friday for business hours generates a warning'
say 'that Saturday may not be a business day, and calling on'
say 'Saturday will not let you ask for business hours there on Sunday.'
say ''
end

datenow=DATE()
PARSE VAR datenow day month year
leap=0
IF year//4=0 THEN leap=1
daynow=DATE(d)
IF (daynow>93+leap) & (daynow< 303 + leap) THEN add=16
ELSE add=18
SAY 'Business hours?'
PULL answer
IF abbrev(answer,'Y') THEN biz=1;else biz=0

today=DATE(w)
SELECT
    WHEN today='Monday' THEN tomorrow='Tuesday'
    WHEN today='Tuesday' THEN tomorrow='Wednesday'
    WHEN today='Wednesday' THEN tomorrow='Thursday'
    WHEN today='Thursday' THEN tomorrow='Friday'
    WHEN today='Friday' THEN DO
        tomorrow='Saturday'
        weekend=caution
    END
    WHEN today='Saturday' THEN DO
        tomorrow='Sunday'
        weekend=noway
    END
    WHEN today='Sunday' THEN DO
        tomorrow='Monday'
        weekend=ok
    END
    OTHERWISE NOP
END

IF weekend=caution THEN SAY 'Caution! Saturday may NOT be a workday.'
IF weekend=noway & biz THEN DO
    SAY 'NO Business on Sunday!'
    SAY 'Do not ask for business hours.'
    CALL austime2.rexx
    EXIT
END

DO hours=1 TO 24
    IF hours>13 & hours<22 THEN prefix='';ELSE prefix='CALLPAC'
    timenow=hours
    daynow=today
    IF hours = 24 THEN daynow=tomorrow
    IF hours+add<24 THEN DO
        hoursthere=hours+add
        daythere=today.'
    END
    ELSE DO
        hoursthere=(hours+add)//24
        daythere=tomorrow.'
    END
    IF timenow=24 THEN timenow=0
    IF biz then if hoursthere>8 & hoursthere<17 THEN DO
        IF prefix='' | weekend=OK THEN,
            SAY 'Here: 'format(timenow,2,2) daynow' ==> Australia:
'format(hoursthere,2,2) daythere
        END
        IF -biz THEN if prefix='' | weekend=OK then,
            SAY 'Here: 'format(timenow,2,2) daynow' ==> Australia:
'format(hoursthere,2,2) daythere
    END
END
EXIT

format: PROCEDURE
PARSE ARG num, before, after
num=RIGHT(num,before,0)
num=num||':COPIES('0',after)
RETURN num

```

•AC•

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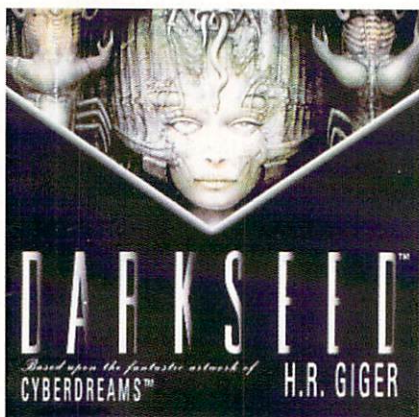
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DIVERSIONS

A peek at the new titles for CD32 and Amiga



Darkseed (CD32)

Mike Dawson is a science fiction writer who just bought an old Victorian house. As he explores his new home, he finds much more than ever expected. You, as Mike, have in your hands control of the fate of two worlds. There is the world as we know it and the dark world of an ancient and dying civilization. More terrifying than your worst nightmare, you must unravel the secret of the sinister plot and travel down the dark passage to their world. All of humanity is depending on you and your time is running out so choose carefully. Explore over 75 locations with real-time animation. No typing is necessary, simply use the point-and-click interface to move through the movie like storyline with its twists, realistic voices and sound effects.

Cyberdreams, Inc.,

PGA Tour Golf (A500,600,1200)

PGA Tour Golf calls itself the most accurate and addictive Computer Golf Simulation. Real tournaments are played on actual Tournament Players

Club courses. You can read the greens with the all new 3D contoured grid which exposes each subtle curve. Specialty shots are available for tough spots. Choose from chip and punch shots or a fringe putt. The game gives you TV style views including a panoramic aerial fly-by of the hole and instant replay. Three authentic courses are featured, including TPC at

Sawgrass, TPC at Avenel, and PGA West. Compete against 60 PGA Tour Pros in 4 round tournament play with 1 to 4 human or computer opponents.

Electronic Arts

Brian the Lion (CD32)

Meet the funkiest feline on two legs. Brian the Lion stars in this wild

BMD U.S.—Top 10 for December

Top 20 Amiga Game Titles

Nov	
1	- Mortal Kombat II
2	- Cannon Fodder 2
3	- Zeewolf
4	- Beaujolly Compilation
5	- Super Stardust AGA
6	2 Sim Classics
7	- Lords of the Realm AGA
8	- Rise of the Robots
9	4 Val Halla
10	- Subwar 2050
11	- Jungle Strike
12	- Tower Assault
13	8 Beneath A Steel Sky
14	- Arcade Pool
15	- Theme Park
16	- Mortal Kombat
17	5 Cannon Fodder
18	7 Kings Quest VI
19	9 Gunship 2000
20	- PGA Euro Tour

Top 20 CD32 Titles

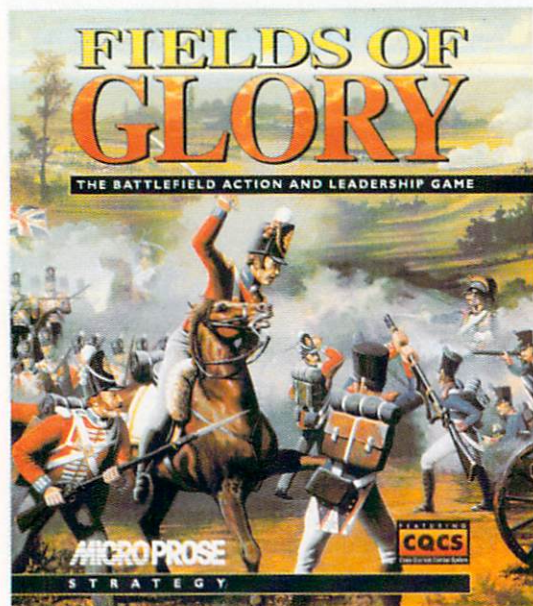
Nov	
1	- Super Stardust
2	- Rise of the Robots
3	- Tower Assault
4	- Subwar 2050
5	- PGA Euro Tour
6	- Dark Seed
7	- Top Gear
8	5 Guardian
9	- Lilit Divil
10	- Microcosm
11	- Bump and Burn
12	2 Labyrinth of Time
13	- Beneath a Steel Sky
14	3 Universe
15	5 Chaos Engine
16	4 Simon Sorcerer
17	- Cannon Fodder
18	- Bubble and Squeeks
19	3 UFO: Enemy Unknown
20	14 Ultimate Body Blows

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adventure for the CD32. Brian lives on an island off the coast of Africa. Most of the time you'll find him taking cat naps or chewing the fat with his best pal, Chris the Crystal. However, his cozy life has been rudely interrupted by a big ugly monster named Geeza who has kidnapped Chris. It seems that Chris has prismatic powers which he can use to hypnotize all the jungle.

Geeza wants to get in on this action and crown himself King of the beasts. Brain is armed only with a mighty roar and a pair of Bermuda shorts. He must save his friend and the rest of the animals. To do this he must take on wave after wave of Geeza's brain-washed followers. Help Brian to recoup his crown and save the jungle. *Psygnosis*



Fields of Glory by Microprose
Could this be your Waterloo?

Fields of Glory (CD32)

This battlefield action and leadership game takes place in 1815 as Napoleon escaped from exile on the island of Elba, returned to France and made his way to Paris in triumph. His disbanded troops once again took up arms and flocked to him rejoicing in his return as Emperor of France. The Allies were stunned and the Anglo-Allied army commanded by the Duke of Wellington decided to combine with the Prussians to defeat him. Napoleon marched north and drove a wedge between the two armies and the lines were drawn for the Waterloo Campaign. You can take control of the Anglo-Allied, French or Prussian forces. You control thousands of troops in close-up conflicts or select wider, tactical views. Issue your orders quickly and effortlessly with the point-and-click interface. Experience battles and the tense excitement of warfare from small engagements to the huge battles of Waterloo and Ligny. *Microprose*

Lilil Divil (CD32)

Join MUTT and his incredible adventures in this cartoon animated adventure. The sands of time in the underworld trickle slowly and the Grand Council meeting approaches. He who draws the shortest straw must venture forth into the Labyrinth of Chaos to bring back the Mystic Pizza of Plenty. Each year since the beginning of recorded time, one has gone forth. None has ever returned. MUTT draws the shortest straw and our hero must go forth towards the foreboding entrance of the labyrinth. Features include highly detailed animation and graphics, five levels with over 50 rooms to explore, self mapping Labyrinth of dangerous tunnels, traps and treasures, and a huge range of puzzles, problems, felons and foes. *Gremlin Graphics Software*

Bubble and Squeak (CD32)

This isn't a platform game, it isn't a puzzle game and it isn't a shoot 'em-up. It's all three rolled into one. Your mission is to guide Bubble through level after level of platform action involving flying elephants, ducks with baseball bats, and countless other wacky creatures. Collect a submarine

(continued on page 55)



Feedback

Letters to the Editor

Fire the Bandito? Nostalgia Amiga. AMDG and The Milk Department—A Fable for our times. Advice to the Amiga Winners!

Dear AC,

I think it's time the Bandito started spreading roomers under the name of a different employer. Computer magazines are to inform users, to make them more efficient, more knowledgeable, more profitable and thus to be proud of their system. The space that is given to this column would be more beneficial to me and the Amiga community if it were used in a more productive manner. Don't tell me about failure, tell me about success. The Amiga market needs reviews and criticism that are constructive not destructive. This is a crucial time to keep Amiga support alive and healthy.

"Ask me about Amiga and its software applications and I'll tell you how cool it is."

Joseph Simons

Ask me about Amiga and its software applications and I'll tell you how cool it is. As a music sequencer, it can give a plethora of tracks and midi channels with multiple, individually addressable midi outs to drive your Korg, Roland, Kurzweil and Yamaha gear. It can digitize multiple tracks of analog audio-voice, acoustic instrument, or sample CDs or any other enjoyable noise at DAT quality 48Hz and synchronize your light and video show to exact notes of music. Cool. And your broadcast quality videos can be prerecorded and or live combined with lifelike graphics, animations, special effects, 2 and 3 dimensional extravaganzas. Can you say blow people away. I can and I will. How about you Bandito? It tells you a lot about Amiga technology when you attend an SGI party at Sigrapp and the musical guests aren't using Indigos. They are using Amigas with Video Toasters to enthrall the audience with a live multimedia performance!

Sincerely,
Joseph Simons
Kingston, PA

PS: Hey NewTek, why do you market Video Toasters with stickers to cover up the name of the computer system? Let it be seen and heard. Long live the Amiga!

Dear AC,

I have never written a letter to any publication before. This is a first and hopefully not the last. I am typing this letter on a Hertz (any "Johnny comes lately" company can produce a PC clone) Pentium 60Mhz PC using (you guessed it) Word Perfect. You see I work in a New York city hospital in their data processing center. Yes, as you would guess surrounded by IBM PCs and clones. Not only in our department but throughout the institution so I am forced to use them when I am at work. However, it does not mean that I like them. Though I am highly proficient in using and repairing them. I find them a Bore. Their uses are limited to just Word processing (without graphics since graphic and sound cards cost extra) and spreadsheets (yawn!).

I remember when my brother and I first saw the Amiga. It was in a little Amiga dealer's computer store,

"The A500 was side by side with the old IBM clones and immediately everyone was taken in by the overwhelming mismatch."

Pierre Narcisse

which went out of business like many other. When Commodore, led by that *%*&^ Mr. Medi and %\$#@ Gould, would not heed their cries or their users.

The A500 was side by side with the old IBM clones and immediately everyone was taken in by the overwhelming mismatch. There stood, in all her glorious 4096 colors, displaying a picture of David Bowie in the movie Dark Crystal the Amiga 500 at \$589.95. The pathetic IBM clone stood at \$1999.98. Clearly if the price difference alone did not convince you the sheer power and beauty of the Amiga did. If you needed more power and expansion, why next to

the A500 stood her Mighty sister the A2000. There was excitement in the air, it burst with energy as both wowed with amazement as the dealer displayed the machines showing off their power with such applications as Deluxe Paint and Digi-View and games like Dragon's Lair, TV sport football, Rocket Ranger etc... Vendors like Gold Disk, GVP, Saxon, New Horizons and countless others were producing professional business applications with superior graphic capabilities. Making these business applications such as Professional Page, Page Setter, ProWrite etc. Much more attractive than their counterparts on either black and white Macs and eight color PC clones.

Yes, Commodore, well they were on top, on top of a revolution that handled right would have made them leaders in a new computer era. That did not happen. Mr

Dear AC

This is a story of a small shop called AMDG located in a small town called Friends Town. AMDG was selling milk and dairy products to the people of Friends Town. AMDG called their milk The Milk Department. To many people in this small but vibrant town, The Milk Department was not just like any other milk, it was more, it was their main diet. They saw many other dairy products come and go. Some products stayed and even became more popular than The Milk Department, but it was always The Milk Department that they used when they wanted to stay healthy and efficient.

AMDG was selling The Milk Department with a powerful ingredient set that makes the body healthier and more flexible. This powerful ingredient was called ARX_Set.

The Amiga is still in a strong position to leap ahead again. To do so the new owners must listen to us—the users (after all there are about five million of us). The Amiga is quickly becoming a cult classic just like Star Trek and Harley Davidson.”
Pierre Narcisse

Medi instead of following what all his corporate advisers and most importantly, the users were saying \$%#@* things up! Instead of an Amiga 3000, with a higher range of colors, (256 plus Ham8 mode) and sound (16-bit sound) Mr. Medi opted to recede into the past.

Mr. Medi instead pushes the company back by trying to recreate the glory days of the C64. He stupidly launches that piece of \$%#@ CDTV giving Apple and all the clone makers time to catch up and even surpass the abilities of the Amiga. Instead of concentrating on the Amiga line like users requested and his staff of engineers urged, he went back into the past because he is a man of no vision. Instead of making CDTV an add-on, CD ROM drive for the Amiga line, he made it a stand alone product. The same applies to the CD32, instead of creating it as a CD ROM drive for the late attempted revival of the product line, the A4000 and her “triple A” chip set. (That should have been in the A3000 in the first place while CBM still had a chance to run away with the market again.)

Well we all saw it coming, Mr. Medi's stupidity turned a billion-dollar company into nothing. He alone is to blame for this hardship. Because Mr. Medi's lack of leadership and vision, CBM is no more. The Amiga is still in a strong position to leap ahead again. To do so the new owners must listen to us—the users (after all there are about five million of us). The Amiga is quickly becoming a cult classic just like Star Trek and Harley Davidson. The Amiga is (as Captain Kirk would say in jerky speech tones) a programmer's dream. It is a graphic, 3D design, artist heaven, since all PC games are now being designed on it so it will be here a long time.

Pierre Narcisse
Flushing, NY

In fact, the people of Friends Town knew that ARX was what made their small town almost unique. AMDG was good to the people of Friends Town, and the people were good to AMDG. Even the mayor, who was unpopular with the people of Friends Town, and now dying, recognized the contribution of AMDG to the town and awarded AMDG with The Friends Town Distinction Award.

Then one day, a man called Mr Big with a gold plated chain and a Rolex watch that was made in Hong Kong entered AMDG shop. Mr Big told AMDG owner, Mr. Wary, that AMDG dairy products are too good to be sold to a small town. “You have to think BIG” said Mr Big, “Repackage your products, rename your features, change the name into something more hip and catchy, something Big city people can associate with. Call it something like Plastic Reality, and maybe you just have to forget about Friends Town and its people for the moment,” Mr. Big said.

Mr Wary repackaged his products according to what Mr. Big recommended and went to the Big city. Plastic Reality became a big hit among the city boys. In fact, it became so big that AMDG decided to call itself after its product, Plastic Reality, Inc. The people of Friends Town wanted to know if they would be able to use Plastic Reality's new product, just like the city boys. They were told that for the time being they have to change their kitchenware and maybe their homes, or even move to the Big city to use their new products from Plastic Reality.

The people of Friends Town refused to change their kitchenware, homes or even move to the big city. They like where they live and know that if they hold hands together their small town will survive and live happily. Fortunately for them there is a new shop that sells a better milk product, called Milk FX.

Sincerely,
Ahmed Balfakih
Malaysia

Dear Winning Bidder of Commodore,

Congratulations and a hearty THANK YOU from all proud Amiga owners !!!!! I congratulate your unbelievable patience in all this massive, messed-up situation, and extend my most sincere wishes for a profitable, successful, and (hopefully) FUN time producing Amigas for many years to come!

Since you may wish to know something about what Amiga fans would like to see happen, let me offer my humble preferences. I am absolutely in love with the video-computer marriage made possible by the Amiga and such cards as the Toaster and OpalVision. Working with the Toaster has changed my life. However, one problem with Commodore was that they built the Amiga 4000 to be incompatible with the previous Toaster card and they built it with inadequate slots and power and RAM to properly

Dear AC,

I have been a reader/ subscriber of Amazing Computing since purchasing my first Amiga. I am the former owner of several Commodore 64/128's, but have been an Amigan (or is it Amigo?) for over two years now. I enjoy your magazine very much, and read it cover to cover, referring to back issues often. I also read "that other" Amiga magazine, but only because of the advertisements. It is the only feature that can be considered "better" than your publication. I get the feeling that their staff only uses Amigas because they have to, not because they like to. This is the opposite of the feeling I get from your authors.

There are several things I would like to say about recent events, and as I am isolated here (with no BBS access) I have no one to say them to but you!

To The Winning Bidder, "Lastly, please consider working very closely with developers BEFORE you announce completion of some major new computer or device."

Steven L Thomassin

deal with such a complex application.

So, my humble request is to try and produce Amigas as soon as possible with capabilities similar to what the Tower was supposed to have, along with accelerated versions and greater RAM capacities (both chip and fast RAM). An Amiga with a 68060 processor (or at least a 68040 at 50 Mhz), with a 4 MEG of chip RAM and 32 MEG of fast RAM, WITH AT LEAST TWO VIDEO SLOTS for such wonders as the Video Toaster and OpalVision cards, and with FAST SCSI controllers would at least begin to make the Amiga competitive with the IBM and Apple computers of power and speed. (We already know the Amiga towers above the other platforms in video and graphics capabilities.)

Lastly, please consider working very closely with developers BEFORE you announce completion of some major new computer or device. Previously, Commodore caught everyone by surprise (especially NewTek) with the announcement of their 4000 machine. In my opinion, that one move was a major factor in Commodore's demise. Instead of embracing NewTek and working with them to insure compatibility, Commodore worked entirely without them and made a product incompatible with the Toaster. From a business and success standpoint, such "decisions" border on the preposterous !!! To ignore a company which brought the Amiga such new-found success is worse than absurd. All Amiga-based companies should be viewed as allies, not as enemies or flies to be ignored.

Thank you for hanging-in there over so many difficult months, and rest assured that — if you operate things in an intelligent and positive manner — you will have the most devoted and loyal users around. Best of luck, and congratulations again !!

Most Sincerely,
Steven L Thomassin
Ventura, CA

1. Commodore is history, and so what. Their record speaks for itself. Great hardware and software, horrible business practices.
2. My Amigas did not stop working on the day Commodore died. In fact, I believe that my Amiga 2000(T) actually breathed a sigh of relief!
3. I plan on several upgrades to my Amigas in the next year, to include a Retina board, a couple of new (larger) hard drives, and maybe (if the price is right) a new accelerator. This is in addition to my normal expenditures on new software, software upgrades, books and magazines, and CD-ROMs. Commodore's protracted agony and death have no effect on my plans. Vendors, Publishers, Developers, please note!
4. I love my Amigas, as much as I loved my 1967 Lotus Europa. I didn't care if Lotus was in business or not, I loved that car. It combined form, function, and utility, fitted a niche market (ME), and was rare. I can say exactly the same thing about my Amigas. I just hope spare parts don't become as rare for my Amigas as the Lotus parts were.
5. The Amiga will be hard to replace. I use IBM machines and clones at work daily. I have used Mac's. They do not compare. My old 2000 with a Supra Turbo is as a powerful as the brand new Zenith 486 I use at work. I am not talking about benchmarks, I am talking about productivity. Put a speedup board in an old 286 or a Mac SE and tell me the same. I don't think so.
6. Unless some firm takes over and continues development/production of the Amiga, someday I will have to change. The only possibilities I see on the horizon are NEXTstep and the PowerPCs. I would love to see

AmigaDOS ported to the PowerPC platform. Now that is technology I would "power up" to!

7. The other platforms are steadily looking more and more like Amigas. As they develop "Multimedia" (which is, basically a marriage of television and computer technology) they will become "Amigas". They have no choice.

8. Imitation is the sincerest form of flattery. The Amiga started life with a color, multitasking GUI that could exchange information between programs. Now, almost ten years later, Microsoft has the same, although it is far from bug free. Macintosh, the computer for the rest of them, is slowly developing into something that could be worthwhile. However, I personally am put off by the assumption of Mac authors/magazines that Mac users are all some kind

dying. We bought Commodore 64s to play games and our successors paid a bloody fortune to play the same games on their IBMs.

Several years ago, my boss came to me and said: Pete, the corporation is buying machines for our executives. We have to select a computer. (He was the Apple guru. I was the C64 guru.) He went on. It has to be an Apple or an IBM. I said: "Rats! We'll have to buy IBMs." "Why?" "Because the IBM is old technology which means it is reliable. If the executives have a bad experience with avant-garde machines, they'll want nothing more to do with them. Further, these things have 640K of memory. They can run a large spreadsheet." Notice that it was a software selling the hardware. "Further, we have beneath us a whole lot of IBM personnel keeping the mainframes running. They can keep the small computers running also."

"My Amigas did not stop working on the day
Commodore died. In fact, I believe that my Amiga
2000(T) actually breathed a sigh of relief!"

SSG Patrick J Greene

of "politically correct" aging hippies. There is no way to turn me off quicker on a commercial product than to attach some sort of political statement to its ownership or use. I buy and use a computer for fun and knowledge, not to make a statement. The only statement ownership of the Amiga makes is that the owner knows how to evaluate cost vs value.

Enough soapbox. Thank you for supporting the Amiga community, especially in these final days of Commodore. You have upheld the "home Hobbyist" tradition of computer publications as others have evolved into something less endearing. Come what may, thank you for that.

I remain,
SSG Patrick J Greene
APO, AA

Dear AC,

A constant theme in these magazines is why aren't people buying Amigas? It would make much more sense to ask why people would buy an Amiga. I own one of these lovely things and I love using it. I used to program and tried to keep up with the new languages which become harder and harder to learn and use. The ordinary person has to struggle with Basic. For the ordinary applications most people use, C is an abomination. (I programmed some of the older machines in Assembler, but large programs being written now are a lifetime task.)

Let's face it. A well equipped Amiga is more powerful than the old mainframes. "Ordinary people" are not interested in editing animation tapes and people like myself draw with great difficulty. If you look around you, it is becoming evident that most of the IBM clones have been

Why did the public rush out and buy IBM clones after that. Simple! They could write off the cost of their machines as a tax deduction (business expense) and they could swap disks with the machines at work. Those who had C64s wanted Amigas but couldn't afford 2 machines. If you ask an ordinary person whether he wants an Amiga, he'll tell you his priority is a video camera. If he wants to play games, he buys a game machine (unless he has become an IBM clone fanatic.) When I'm not with the gal I love I love the gal I'm near! The future of the Amiga depends upon the sale of the CD32 game machine! If you sell the game machines, the spreadsheets will come!

Sincerely,
Pete Williams
East Longmeadow, MA

P.S. For the US, the game machine should use the AAA technology!

**If you have a letter for
Feedback, send it to:**

*Feedback
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722*

(continued from page 50)

token and you'll get a chance to shoot it out under water with the evil Kat-o-Nine-Tails and his fishy friends. Each shoot 'em up is tougher than the one before. Bubble also takes his monster friend Squeak along. This should help, however, its a bit of a puzzle as Squeak is not as agile as Bubble and none to bright either. Just give Squeak some bubble gum and he'll let you ride on his back so you can jump all over those pesky creatures that keep getting in your way. If you can find the right gum he'll be able to fly. Kick Squeak and he'll curl up in a ball and roll around the landscape at supersonic speed.

Audiogenic Software Ltd

Clockwiser (All Amigas)

Clockwiser is a puzzle game with over 100 levels of mind-bending fun. Just make the left hand of the screen match that on the right. Sounds easy? You'll need to move 'em, beam 'em up, use bombs (careful now), cope with self-generating diamonds and more. This also has to be done within a limited period of time.

Clockwiser comes complete with a puzzle editor which means that you can produce your own puzzles. Decide on your own background color, select the elements and make up the starting puzzle. Choose a different element and then add to the puzzle and so on.

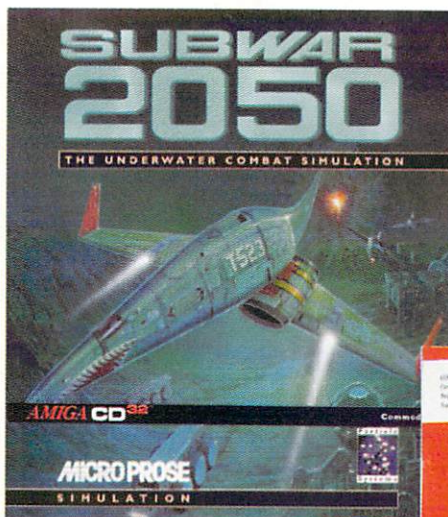
Rasputin Software

Subwar 2050 The Underwater Combat Simulation (CD32)

The year is 2050 AD. The oceans have become a vital source of food, energy, and minerals. Exploitation of the sea has been turned into the most lucrative industry. It is a wealth that must be defended but the environment favors stealthy sabotage.

As a mercenary sub pilot, you will be fighting fierce battles for corporate territory deep beneath the sea. This title allows you to explore thousands of square miles of accurately mapped 3-D underwater seascapes. There are four different multi-mission campaigns: the Antarctic Ocean, the North Atlantic, the South China Sea and the Sea of Japan.

Four types of submarines are included, such as deep-sea exploration vessels, reconnaissance subs and



highly maneuverable fighter submarines. 'Simulated Combat' mode allows you to master such maneuvers as Knuckles and Deep Dives before entering a mission. Each campaign also has a running storyline to link missions together, while a comprehensive training scenario allows you to learn the art of underwater combat.

Microprose

Superfrog (CD32)

The evil old witch has turned the Prince of the Magic Kingdom into a bright green frog and stole away with his loved one. But as it turns out, life is not just doom and gloom for the once regal, but now green and warty hero. A strange and powerful elixir just happens to float down the stream and catches his attention. He takes a swig and, after a few minor explosions, he becomes Superfrog. With his new found boundless courage and determination he sets out for the Magic Forest. He knows he must get back his girl, vanquish the curse, and give that old witch what she truly deserves.

Superfrog features include 360 degree scrolling, 32 color cartoon style graphics, eight musical scores, secret rooms, hidden rewards and skill levels which cater to younger (or older) players.

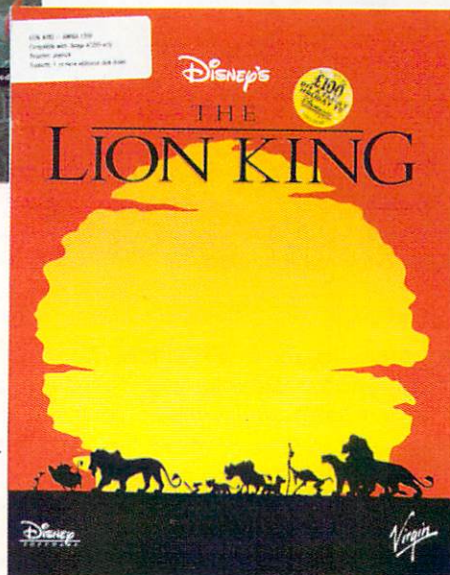
Team 17

Disney's The Lion King (A1200 only)

Disney's The Lion King brings the majesty and mystery of Africa to life. The game is played out through the tale of Simba, a lion cub faced with the all challenging transition to maturity.

Subwar 2050: Become a mercenary sub pilot in 2050 and fight for corporate territory in the most lucrative industry deep beneath the sea.

Disney's The Lion King: Help Simba grow to maturity and regain his rightful place as The Lion King.



In this game you can be a part of the adventure. After being driven into the wilderness by his evil Uncle Scar, Simba finds his salvation with Pumbaa the warthog and Timon the meerkat.

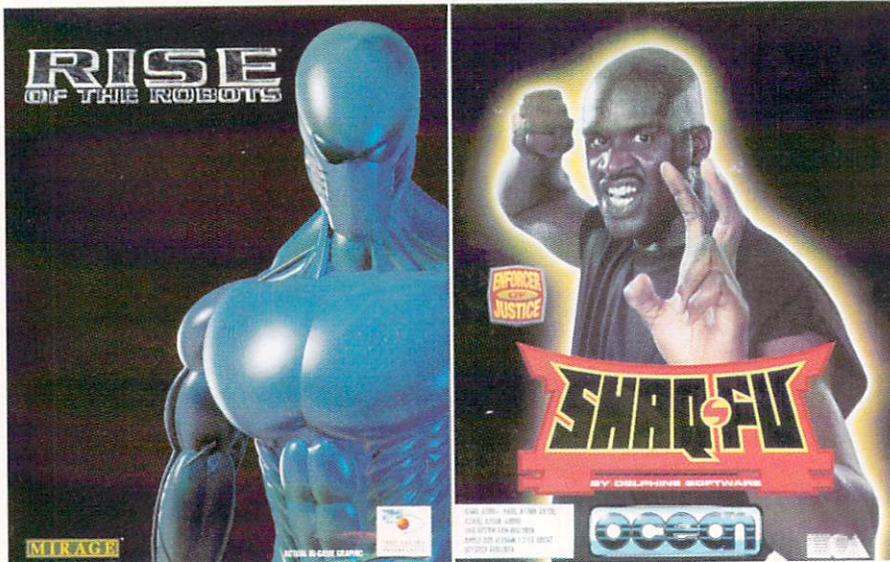
Your job is to tackle the heinous hyenas in the elephant's graveyard and avoid the trampling hooves of stampeding wildebeest. All this while fighting your way through 7 levels of play to help ensure Simba's claim to his rightful place as The Lion King.

Options include: difficulty levels - the harder the setting, the less Simba characters and Continues you have to play with; Music may be turned on or off; a sound test which allows you to listen to all sound effects and music used, just select a sound from the list presented as you would an option; and Triggers allows you to change the basic controls.

Disney Software

Super Stardust (A1200)

In this title you are the world's leading aerial combat pilot and you must take control of the Panther PX-2. You must not only blow apart all meteors careening your way but also



Battle a future technology in "Rise" or with a current superstar in "Shaq-Fu".

repel the alien forces. Experience 30 levels of action, 256 color graphics and 12 channel music. Included are four spectacular tunnel sequences, hordes of 3-D ray-traced enemies, underwater missions and two special secret missions.

You've only got 13 hours to save the galaxy! The Evil Professor Schaumund is back. A year ago he launched the most violent attack on your galaxy in the hope of imprisoning the beautiful princess Voi Levi. Even though his evil agents bombarded the galaxy in an attempt to crush all resistance, you in your small but powerful Lynx X1 defeated the evil genius.

But now his army is more terrifying and his goal is still to conquer the galaxy and enslave the princess. He does not mind sacrificing millions of innocent lives to achieve this. Once again the galaxy is depending on you. Now you have an all new, super powerful Panther PX2 fighter, but remember that Professor Schaumund is bent on revenge. Good Luck!

Team 17

Rise of the Robots (CD32)

Rise of the Robots is termed a "new generation" computer game designed to combine state-of-the-art programming design and graphics display. It was created using the Auto Desk 3-D Studio™ CAD software package. The

various objects in the game were created by Mirage's artists in their basic component form and once assembled were then colored and textured thus completing the rendering process.

Rise takes you into a future world which is highly industrialized. In this world a supreme super-tech society has been created. For this technology, however, the planet has paid a heavy price. The lands and oceans have been plundered for raw materials and are irretrievably polluted. All life support is now manufactured in population centers. Controlling the production is a ruling politico-military class. Internal social disorder is commonplace. Both military and trade wars between city states are regularly instituted as a means of population control. The servants of society are the robots. Electrocorp is the planet's major robot manufacturer.

The Supervisor has successfully run the plant for several months but has become infected with a highly pernicious computer Ego Virus which has corrupted her behavioral programming and has created a vicious psychotic personality. You are the human-based Cyborg which has been chosen to seek out and destroy her before she takes over the factory and reprograms its robot-workers.

Mirage

Mortal Kombat II

Nothing can prepare you for this. Shao Kahn's Outworld tournament first tests a warrior's fighting skill by pitting him against each of the formidable Earth warriors. Meters in the upper-left and upper-right corners of the screen measures the health of the warriors during their battles. The meters begin green, but each hit adds an amount of red signifying injury. If the bar becomes completely red that warrior is knocked out and the round goes to the opponent. Should time run out first, the warrior with the less injury is declared the victor.

Once a warrior has defeated the other komatants in the tournament, he then takes on the first of his Outworld hosts, the demon Shang Tsung. Tsung possesses both powerful magic and considerable physical skill. Should you defeat him, the next opponent is the massive Kintaro. He is of the same race of half-human dragons which spawned Goro. Due to the defeat of his comrade at the hands of a mere mortal, he has entered this tournament bent on revenge. Shao Kahn granted him this privilege in exchange for his servitude. Defeating Kintaro proves a warrior worthy of meeting Shao Kahn himself in battle. You must defeat him to end his rule and become the Supreme Warrior. It is compatible with the A500, A500+, A600, A1200, A3000 with 1Mb RAM (Min), Joystick or Joypad. Not hard drive installable.

Aklaim

Shaq-Fu

Shaq brings his awesome skill and size to a multi-world fighting game. You are Shaq. You must use your lightning-fast Shurken and other martial art techniques to prevail over 11 intensely evil warriors in the enforcement of justice. Or you may choose any of the 12 warriors and fight head to head. Summon Voodoo's bone shattering earthquake, rebound with Rajah's shockwave or lash out with Sett's terrifying mummy wrap. Included are many secret power moves to discover and master. Compatible with A500, A500+, A600, A1200, A1500, A2000, A3000, A4000, 1MB sys RAM required, AmigaDOS v1.3 or above, joystick required.

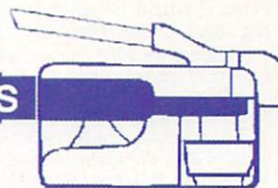
Ocean

•AC•

on line

by Rob Hays

amiga telecommunications



The Small Computer System Interface is a marvelously adaptable method for adding all sorts of devices to your computer. Better known by its initials SCSI (pronounced scuzzy), this interface either comes standard on, or can be easily added to, any model Amiga. However, its very versatility sometimes causes problems, and this month we will take a look at several pieces of software available for downloading that can make your SCSI life much easier.

Just the FAQs

Before undertaking any journey into unknown territory, it is best to obtain all the information you can on the subject. The file SCSI_FAQ.LHA is an excellent place to start. This archive contains two text files that were put together by Johnathan Vail, and currently being maintained by Gary Field. By the way, faq is a common Internet abbreviation, which stands for Frequently Asked Questions. The files SCSI1.FAQ and SCSI2.FAQ ask and answer more than 50 questions, which run the gamut from the simple "What is SCSI?", to more esoteric questions concerning termination resistors for specific hard drives.

Proper termination of SCSI devices is critical to their proper operation, and yet termination remains more of an art than a science. Some people will tell you to terminate only the last device in a chain of devices, others say the first and last, others say none of the above. These text files not only contain information about these subjects, they also include phone numbers of different companies that manufacture these devices, and listings of many Internet sites where more detailed information can be obtained.

SCSIMounter

If the SCSI device you add to your Amiga is a removable hard disk, such as a SyQuest, you may find the

program SCSIMounter a great help. These removable drives use a cartridge that can be physically removed from the drive itself, allowing for easily transportable files and an infinite-capacity hard drive. When a cartridge fills up, just insert a new one for more storage. Like any hard drive, they can be partitioned and formatted to suit your needs.

Unfortunately, if you have more than one cartridge, and they are not partitioned identically, your system will not respond properly to a cartridge change unless you re-boot. SCSIMounter corrects this problem, and others.

Written by Martin Blatter in Switzerland, this freely distributable program allows you to mount or unmount any partition on any SCSI device attached to your system. It will also allow you to mount a SCSI device that was not attached when you booted your system. All functions can be controlled through a graphical interface or through the command line. Program requirements are simple; an Amiga with a SCSI host adaptor that supports the Commodore Rigid Disk Block and SCSI Direct standards, and Kickstart 2.0 or higher. Documentation is included both in AmigaGuide and ASCII text formats. SCSIMounter is currently at version 2.03, and if you use a 2400bps modem, the 32,128 byte file can be yours in less than three minutes.

SCSIutil

If you have a CD-ROM drive attached to your Amiga, Gary Duncan and Heiko Rath offer the program SCSIutil. This program provides low-level control of CD-ROM drive functions such as starting or stopping the drive motor, reading specific sectors, etc. Audio functions are also included to read 16 bit raw audio data, or convert it into 8 bit audio. This is another freely distributable package, and is squarely aimed at the advanced user. Operation is command line only (Figure 1), and if you would like to experi-

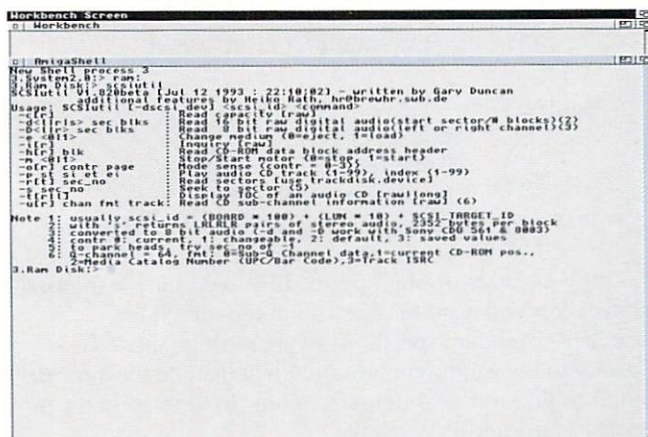


Figure 1: SCSIutil by Gary Duncan and Heiko Rath

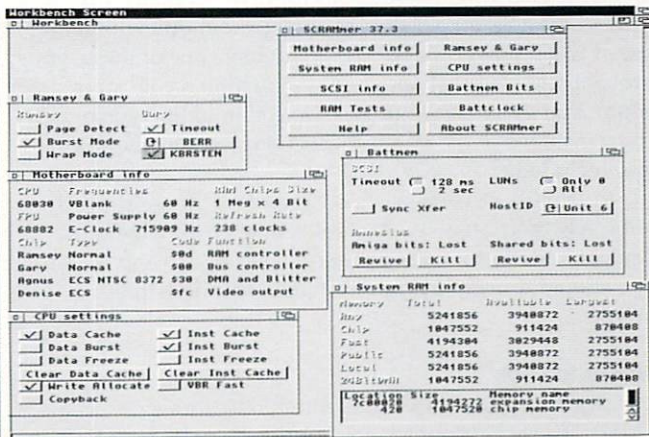


Figure 2: Scrammer from Giuliano Peritore of Italy

As told by AC Tech #3.4 and Amiga World Aug. '93...

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ment, the source code is included in the archive package. At 50,816 bytes, the archive will download in a bit over four minutes.

Scrammer

If your Amiga is a 3000 or 4000, the program Scrammer from Giuliano Peritore of Italy gives you control of and information about several important system functions. When started, Scrammer opens a small window on your Workbench filled with gadgets. Clicking these will open other windows with information on your Amiga ranging from chip versions and speeds, to SCSI devices attached (Figure 2). One of the parameters that Scrammer allows you to adjust is the amount of time the system will wait at boot-up before checking the SCSI bus for drives. Some hard drives take a lot longer than normal to spin up to operating speed when power is applied. If you have one of these, you probably have to re-boot your system after a cold start before that drive is recognized. Detection of the type of ram chips installed and a ram test function, among others, are also included.

Currently at version 37.3b, Scrammer is copyrighted, but freely distributable. The 33,408 byte archive includes AmigaGuide format documentation in English and Italian, and should transfer to your system in less than three minutes.

Where to Look

The file SCSI_FAQ.LHA I found only on GENie, as file #23424. The SCSIMounter program is file #17999 on GENie,

is in the AmigaUser Forum on CIS as SCSIMT.LHA, and is on Portal as SCSIMOUNT.LZH. The SCSIUtil program is file #22849 on GENie, SCSIUT.LHA in AmigaUser, and SCSIUTIL2.0.LHA on Portal. Scrammer is on GENie as file #23779, SCRAM.LHA in AmigaUser, and SCRAMMER.LHA on Delphi.

Remember to check for later versions on your favorite system, and always do a keyword search. Just because I did not find a certain file on a particular system, does not mean you won't find it later. The file areas of the major on line services tend to cross-pollinate each other as users upload files to them.

Who You Gonna Call?

What follows are the first three responses to my request for information concerning local Amiga BBS's. If any of these are near your location, give them a call.

NAME: New Excelsior BBS
PHONE: (909) 884-1747
SPEEDS SUPPORTED: 1200-38,400
HOURS: 24
CONTACT: R.Dewey Mullins III
P.O.Box 3791
San Bernadino, CA 92413-3791

NAME: Anchor & FLUX
PHONE: (313) 453-5370
SPEEDS SUPPORTED: 2400-28,800 8-N-1
CONTACT: James R. Gillespie
jimmm@be0968.be.ford.com

NAME: Awesome Ami BBS
PHONE: (512) 443-0900
SPEEDS SUPPORTED: up to 28,800 8-N-1 Full Duplex
CONTACT: Dale Frameli
3707 Manchaca Road
Apt. 279
Austin, TX 78704

Where To Find Me

R.Hays5	on GENie
RHAYS	on Delphi
72764,2066	on CompuServe
Rob Hays	on Portal

InterNet users, the quickest response will probably occur if you use: R.HAYS5@GENIE.GEIS.COM

For U.S.Mail:

Rob Hays
P.O.Box 194
Bloomington, IN 47402

Please include a SASE if you need a personal reply.

If you run an Amiga specific BBS, send me the information callers will need to access your system. Phone number(s), modem speeds, software settings, etc. As a service to the Amiga community I will include the information I receive in this column from time to time. Send the info to any of my addresses above.

•AC•

Front Ending: Deluxe Music

by Randy Finch

Beginning with version 2.0 of AmigaDOS, a new feature known as public screens became available. This feature allows any program to declare its custom screen as a public screen on which other programs can create windows. Many of the newer programs for the Amiga, including Deluxe Music 2.0 (Figure 1), register their screens as public with the operating system, thus allowing other programs to open windows on them. Of course, the ability to open a window on another program's screen is not very useful unless there is some way for the programs to communicate with each other. This is where ARexx comes in. It is the standard way for programs to communicate on the Amiga. In this article I will discuss a CanDo 2.51 program I wrote named RandomNotes. It makes use of CanDo's ability to open windows on public screens and its ARexx communications capabilities. The RandomNotes program is shown in Listing 1.

RandomNotes Features

RandomNotes opens a window on Deluxe Music's screen (Figure 2) and then sends ARexx commands to Deluxe Music to create a random tune based on user input. This input includes selecting a key signature, a time signature, the number of measures in the tune, and a couple of parameters that confine the randomness of the notes. When the Generate button is pressed, the tune is created. The tune can be played by pressing the Play button and stopped by pressing the Stop button. The key signature has an initial value of C-MAJOR and is displayed in the rollo button in the upper-left corner of the RandomNotes window. The key can be changed by pressing the rollo button. Each time it is pressed, the key changes. There are 30 possible key signatures recognized by Deluxe Music.

The time signature has a default value of 4/4 which means that there are four beats per measure (top number) with a quarter note receiving one beat (bottom number). If this were changed to 3/8, then there would be three beats to a measure with an eighth note receiving one beat. The beats per measure and note to receive a beat can be changed by pressing the appropriate arrow buttons to the right of the time signature display. The upper number can vary from 1 to 16 in steps of 1 while the lower number can vary from 1 to 64 in multiples of 2 (e.g. 1, 2, 4, 8, ...).

The number of measures has a default value of four but can be changed by clicking the integer input field and typing a new value. This value controls the total number of measures in the random tune.

The two parameters that confine the randomness of the notes in the tune are the maximum note duration variation and the maximum note variation. The former controls the amount of variation in note duration from the base beat value in the time signature (the bottom number) and has a default value of one. The latter controls the maximum variation in the note pitch from one note to the next and has

a default value of two. Each of these values can be changed by typing a new number into the appropriate field.

When the Generate button is pressed, RandomNotes sends Deluxe Music the appropriate ARexx commands to clear the current tune, set the key signature and the time signature, and insert the randomly generated notes. Once the tune is generated, it can be played by pressing the Play button and stopped by pressing the Stop button.

The DMCARD Card

The RandomNotes deck consists of only one card named DMCARD. As shown in the card's Window definition section (Listing 1), it opens on the DeluxeMusic public screen (Figure 2). The public screen name can be selected from the Window Editor requester (Figure 3). When the button to the right of the Public Screen check box is pressed, a list of available public screens will be presented. Of course, Deluxe Music must be loaded for its screen to appear in the list.

The DMCARD card has a BeforeAttachment and an AfterAttachment script. The BeforeAttachment script first attempts to speak to the DMUSIC ARexx port. If an error occurs, then Deluxe Music is not currently running. The script then attempts to execute Deluxe Music and continues to look for the DMUSIC ARexx port. If it is not found, RandomNotes prints a message and exits. If the port is found, the script pauses for five seconds to allow time for Deluxe Music's screen to be set up and registered as public with the operating system. If RandomNotes attaches its card before Deluxe Music's screen is set up, it will open on the Workbench screen instead. The five second delay may need to be increased on slower systems.

After the ARexx connection is established, a Deluxe Music ARexx command, GETATTR, is sent to Deluxe Music. This command tells Deluxe Music that some information is needed, in this case the width of the document window (the one with the musical score). Deluxe Music then passes the requested information back to RandomNotes. CanDo stores return values from an ARexx

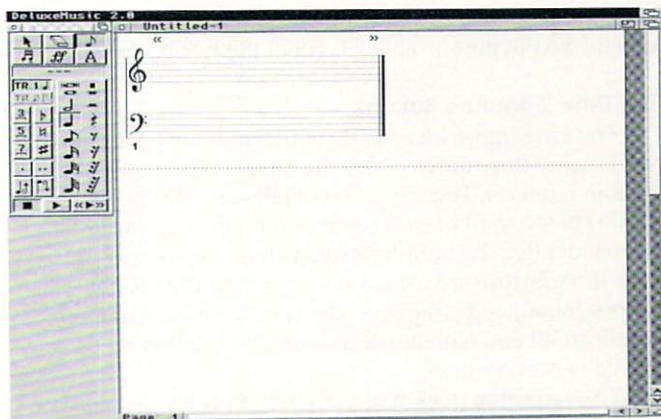


Figure 1. Deluxe Music User Interface

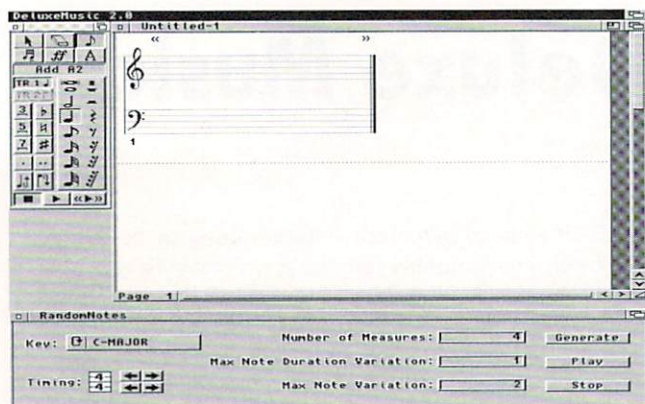


Figure 2. Deluxe Music Interface with RandomNotes Card

command in the system variable, MessageReturned. This value is used as part of another ARexx command, SIZEWINDOW. Here, Deluxe Music is directed to re-size the height of its current window (the document or score window) to 280. The width remains the same since the current width obtained from the GETATTR command is passed back in the SIZEWINDOW command. After the window is re-sized, there will be space at the bottom of the screen for the RandomNotes window. The difference can be seen by comparing Figures 1 and 2. Finally, the 30 elements of the KeyText array are defined. The text used for the array elements is the same as that needed in the Deluxe Music ARexx commands as you will see later.

The AfterAttachment script writes all the necessary labels on the card. It then loads a brush named MusicStaff.br into a buffer named ClippedBrush. This brush is used by the routine ShowTime to display the time signature. Next, the initial time signature values are assigned and displayed. Finally, the initial key signature index is set and its text is displayed.

The Key Signature Button

This button is an area button with a rollo border, which indicates that a press of the button will change the selection text within it. The initial text on the button is C-MAJOR, which is the value of KeyText[1]. Each time the button is pressed, its OnRelease script executes. This script simply increments the value of KeyTextIndex by one and executes the global routine, ShowKey. A modulo operator is used to ensure that the value of KeyTextIndex never exceeds 30, which is the number of elements in the array. The ShowKey routine erases the text in the rollo button and replaces it with the text in the current element of the KeyText array.

The Time Signature Buttons

The time signature consists of two numbers: the beats per measure (top number) and the note to receive a beat (bottom number). There is a pair of left and right arrow buttons to the right of each number for adjusting each independently. The buttons for adjusting the number of beats per measure are named BeatsLeft and BeatsRight. The buttons for adjusting the note to receive a beat are named NoteBeatLeft and NoteBeatRight. Each button has an OnClick event script.

The algorithm in each of these scripts will be executed when the user clicks on the respective buttons and will

continue to execute until the mouse button is released. The BeatsLeft and BeatsRight buttons simply decrement and increment by one the current value of Beats, which is the top number in the time signature, ensuring that its value never drops below one or exceeds 16. The NoteBeatLeft and NoteBeatRight buttons simply decrement and increment by multiples of two the current value of NoteBeat, which is the bottom number in the time signature, ensuring that its value never drops below one or exceeds 64.

The script for each of the four time signature buttons executes a global routine named ShowTime each time the Beats or NoteBeat variable is changed. This routine re-displays the ClippedBrush brush containing the small musical staff, overwriting the current display. Next, the Beats and NoteBeat values are printed on top of the brush. A simple algorithm is used for the printing of each number so that it will be centered in the musical staff brush regardless of whether the number has one or two digits. Each of the scripts for the four time signature buttons also has a short delay built in so the numbers do not change faster than the user's mouse button finger can respond.

The Generate, Play, and Stop Buttons

The Generate button's OnRelease script is a hotbed of activity. It sends many messages to Deluxe Music and has a lot of mathematical formulas that generate the random musical score. Let's follow it through in detail.

First, five commands are sent to Deluxe Music: CLEAR FORCE, LOCKDISPLAY, LOCKGUI, SETKEYSIGNATURE, and SETTIMESIGNATURE. The CLEAR command tells Deluxe Music to clear the current document; the FORCE option specifies that the user should not be prompted for a verification of this action. LOCKDISPLAY prevents the document window from updating each time a new note is added to the score. LOCKGUI prevents the user from directly controlling the Deluxe Music interface. As you probably guessed, SETKEYSIGNATURE and SETTIMESIGNATURE are used to set the key signature and the time signature of the current score.

Next, the total number of Beats in the score, TotalBeats, is calculated by multiplying the number of beats in a measure times the number of measures in the score. Also, the user specified limitations on the variation in a note's pitch, MNV, and a note's duration, MNDV, are extracted from the appropriate integer fields.

In preparation for the note insertion loop, three variables are initialized. NumBeats, which will keep up with the total number of beats in the score, is set to zero. NumBeatsMeasure, which will keep up with the total number of beats in each measure, is set to zero. Finally, Line, which will keep up with the line on the musical staff where the next note will be inserted, is set to zero. A line number of zero is the middle line of the staff. Positive line numbers are above this line and negative numbers are below this line.

Now it is time to enter the note insertion loop. As long as the actual number of beats in the score is less than the total number of beats to be added to the score, this loop will execute.

The first task of the loop is to determine the line on which the next note will appear. This is accomplished by selecting a random integer between -MNV and +MNV and

adding this value to Line. Remember that the user specified the value of MNV and therefore has control over how many lines can separate consecutive notes in the score. A similar method is used for determining the duration of the next note. A random integer between -MNDV and +MNDV is selected. Then the value of NoteBeat (set in the time signature) is multiplied by two raised to the power of the random integer. This will scale the duration up or down by some multiple of two. Once this is calculated, the Min and Max functions are used to make sure the new note duration is not less than one (a whole note) or greater than 64 (a sixty-fourth note), the minimum and maximum allowable by Deluxe Music. Next, the current note duration is adjusted, if necessary, to prevent the number of beats in the current measure from exceeding the value of Beats, which was set in the time signature.

The next task of the loop is to insert the note into the Deluxe Music score. An INSERTITEM NOTE AREXX command is issued along with the DURATION and LINE information. Next, the command NEXT NOTE tells Deluxe Music to prepare to receive the next note in the score.

After inserting the note, the current numbers of beats in the measure and in the score are updated. If the current measure has been filled with the appropriate number of beats, then Deluxe Music is sent the NEXT MEASURE command so that it will prepare a new measure for the upcoming notes. The number of beats in the current measure, NumBeatsMeasure, is then reset to zero.

This ends the loop. As stated, it will continue to execute until the total number of beats for the score has been met. When the loop is exited, five more AREXX commands are sent to Deluxe Music. UNLOCKGUI allows the user to directly interact with the Deluxe Music interface. UNLOCKDISPLAY frees Deluxe Music to display the score that has been created by RandomNotes. WINDOW DOCUMENT ACTIVATE activates the score window. UPDATEDISPLAY causes the score to be displayed. Finally, POSITION SOF positions Deluxe Music's cursor at the start of the score.

Once the score has been generated, it is time to listen to it. By pressing the Play button in the RandomNotes window, its OnRelease script will execute. This script sends two commands to Deluxe Music: WINDOW DOCUMENT ACTIVATE and PLAY. The former makes sure that the score window is active; the latter directs Deluxe Music to play the score. Once the score finishes playing, it will repeat. To stop the score, press the Stop button. A STOP command will be sent to Deluxe Music.

Enhancing the Scores

Since RandomNotes only produces a user constrained random score, most of the scores will not sound good. However, since they are so simple to create, many scores can be created in a short amount of time. Occasionally, one will sound fairly good. At this point, the user can interact directly with the Deluxe Music interface to modify the fairly good score to make it a very good or even excellent score, depending on the abilities of the user. In other words, RandomNotes should be viewed as an idea generator. It

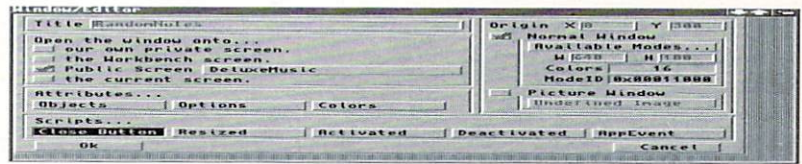


Figure 3. Window Editor Requester in CanDo 2.51

produces a score that helps plant a tune into the mind of the musician. The musician can then enhance the score to fit the idea.

If you are familiar with music theory, you might want to modify the algorithms in RandomNotes and create a program named MozartNotes, or BachNotes, or even MadonnaNotes. In other words, the program could take user defined parameters and create an original score that is reminiscent of the tunes written by or performed by a particular musical artist. If anyone creates such a program, I would be very interested in seeing it.

Listing 1. RandomNotes Deck

```
*****
* Deck "RandomNotes"
* Time 21:03:50
* Date 05/15/94
*****

*****
* Card(s) in deck.
* Card "DMCard"
*****
* 1 Card(s), 1 were printed.
*****

*****
* Natural order of Cards
* Card "DMCard"
*****

*****
* Global Routine(s) in deck.
* Routine "ShowKey"
* Routine "ShowTime"
*****
* 2 Global routines(s), 2 were printed.
*****

*****
* Card "DMCard"
  BeforeAttachment ; used to be OnStartup
  Nop ; Speak to DMusic - Load it if not in memory
  SpeakTo "DMUSIC"
  IfError
    Dos "run >nil: <nil: SYS:DeluxeMusic/DMusic"
    Let Timeout=50
    Loop
      Delay 0,0,10
      SpeakTo "DMUSIC"
    IfError
      Let FoundPort=FALSE
    Else
      Let FoundPort=TRUE
      Nop ; DMusic starts communicating
      Nop ; via AREXX before its
      Nop ; screen is ready for RandomNotes
      Nop ; Delay 5 seconds
      Delay 0,5,0
    EndIf
    Let Timeout=Timeout-1
    Until FoundPort OR (Timeout=0)
  Else
    Let FoundPort=TRUE
  EndIf
  If NOT FoundPort
    Echo "Can't groove witha DMusic, man!"
```



```

Quit
EndIf
Nop ; Get current window width into MessageReturned
SendMessage "GETATTR WINDOW DOCUMENT WIDTH"
Nop ; Resize the height of the window to 280
SendMessage "SIZEWINDOW" ||MessageReturned|| " 280"
Nop ; Assign all keys recognized by DMusic
Let KeyText[1]="C-MAJOR"
Let KeyText[2]="G-MAJOR"
Let KeyText[3]="D-MAJOR"
Let KeyText[4]="A-MAJOR"
Let KeyText[5]="E-MAJOR"
Let KeyText[6]="B-MAJOR"
Let KeyText[7]="F-SHARP-MAJOR"
Let KeyText[8]="C-SHARP-MAJOR"
Let KeyText[9]="F-MAJOR"
Let KeyText[10]="B-FLAT-MAJOR"
Let KeyText[11]="E-FLAT-MAJOR"
Let KeyText[12]="A-FLAT-MAJOR"
Let KeyText[13]="D-FLAT-MAJOR"
Let KeyText[14]="G-FLAT-MAJOR"
Let KeyText[15]="C-FLAT-MAJOR"
Let KeyText[16]="A-MINOR"
Let KeyText[17]="E-MINOR"
Let KeyText[18]="B-MINOR"
Let KeyText[19]="F-SHARP-MINOR"
Let KeyText[20]="C-SHARP-MINOR"
Let KeyText[21]="G-SHARP-MINOR"
Let KeyText[22]="D-SHARP-MINOR"
Let KeyText[23]="A-SHARP-MINOR"
Let KeyText[24]="D-MINOR"
Let KeyText[25]="G-MINOR"
Let KeyText[26]="C-MINOR"
Let KeyText[27]="F-MINOR"
Let KeyText[28]="B-FLAT-MINOR"
Let KeyText[29]="E-FLAT-MINOR"
Let KeyText[30]="A-FLAT-MINOR"
EndScript
AfterAttachment ; used to be AfterStartup
Nop ; Set font and style
SetPrintFont "topaz",8
SetPrintStyle EMBOSSSED,2,0
SetPen 1,0
SetDrawMode JAM1
Nop ; Print text in window
PrintText "      Number of Measures:",200,23
PrintText "Max Note Duration Variation:",200,47
PrintText "      Max Note Variation:",200,71
PrintText "Key:",16,28
PrintText "Timing:",16,67
Nop ; Load the music staff brush for later display
LoadBrush "RCF:CanDo2.51/Brushes/MusicStaff.br","ClippedBrush"
Transparent FALSE
Nop ; Initialize time signature values and display them
Let Beats=4
Let NoteBeat=4
Do "ShowTime"
Nop ; Initialize key signature index and show it
Let KeyTextIndex=1
Do "ShowKey"
EndScript
Window "UserWindow"
Definition
Origin 0,300
Size 640,100
Title "RandomNotes"
NumberOfColors 16,69632
WindowColors 0,1,0 ; Detail, Block, Background
WindowObjects CLOSEBUTTON DEPTHBUTTONS DRAGBAR
WindowFlags ACTIVATE TOPFRONT PUBLIC ,"DeluxeMusic"
EndScript
OnCloseButton
Quit
EndScript
EndObject
AreaButton "Key"
Definition
Origin 56,24
Size 136,16
Border ROLLO,2,1 ; BorderStyle, MainPen, ExtraPen
Highlight COMPLEMENT
ButtonFlags NONE
EndScript
OnRelease
Nop ; Calc next index, show it
Let KeyTextIndex=KeyTextIndex/30+1
Do "ShowKey"
EndScript
EndObject
IntegerField "NumMeasures"
Definition
Origin 432,24
Size 81,8
Justification RIGHT
MaxFieldLength 4
Limits 1,1000
InitialInteger 4
Border DOUBLEBEVEL,2,1 ; BorderStyle, MainPen, ExtraPen
EndScript
IntegerField "MaxNoteDurVar"
Definition
Origin 432,48
Size 81,8
Justification RIGHT
MaxFieldLength 1
Limits 0,6
InitialInteger 1
Border DOUBLEBEVEL,2,1 ; BorderStyle, MainPen, ExtraPen
EndScript
OnRelease
SetObjectState "MaxNoteDurVar",ON
EndScript
EndObject
IntegerField "MaxNoteVar"
Definition
Origin 432,72
Size 81,8
Justification RIGHT
MaxFieldLength 2
Limits 1,12
InitialInteger 2
Border DOUBLEBEVEL,2,1 ; BorderStyle, MainPen, ExtraPen
EndScript
OnRelease
SetObjectState "NumMeasures",ON
EndScript
EndObject
TextButton "Generate"
Definition
Origin 536,24
Font "topaz",8 ; FontName, PointSize
PrintStyle SHADOW,2,3 ; Style, Pen1, Pen2
TextColors 1,0,NORMAL ; PenA, PenB, DrawMode
Text "Generate"
Border BEVEL,2,1 ; BorderStyle, MainPen, ExtraPen
Highlight COMPLEMENT
ButtonFlags NONE
EndScript
OnRelease
Nop ; Clear current score and lock display
SendMessage "CLEAR FORCE"
SendMessage "LOCKDISPLAY"
SendMessage "LOCKGUI"
Nop ; Set key and time signatures
SendMessage "SETKEYSIGNATURE" ||KeyText[KeyTextIndex]|| " 0 0"
SendMessage "SETTIMESIGNATURE" ||Beats|| " ||NoteBeat|| " 0"
Nop ; Get user defined values from fields
Let TotalBeats=Beats*IntegerFrom("NumMeasures")
Let MNV=IntegerFrom("MaxNoteVar")
Let MNDV=IntegerFrom("MaxNoteDurVar")
Nop ; Initialize variables for loop
Let NumBeats=0
Let NumBeatsMeasure=0
Let Line=0
Nop ; Loop until all measures filled
While NumBeats<TotalBeats
Nop ; Calc note line based on random variation
Let LineVar=Random(-MNV,MNV)
Let Line=Line+LineVar
Nop ; Calc note beat based on random variation
Let CurNoteBeatVar=Random(-MNDV,MNDV)
Let CurNoteBeat=Integer(NoteBeat*(2*CurNoteBeatVar))
Nop ; Make sure note beat is within acceptable range 1-64
Let CurNoteBeat=Min(64,Max(1,CurNoteBeat))
Nop ; Make sure notes near end of measure do not exceed
Nop ; maximum allowable
While (NumBeatsMeasure+NoteBeat/CurNoteBeat)>Beats
Let CurNoteBeat=CurNoteBeat*2
EndWhile
Nop ; Insert the note and go to next position
SendMessage "INSERTITEM NOTE DURATION" ||CurNoteBeat|| " LINE"
||Line
SendMessage "NEXT NOTE"
Nop ; Update the number of current beats in the song and
Nop ; the current measure
Let NumBeats=NumBeats+NoteBeat/CurNoteBeat
Let NumBeatsMeasure=NumBeatsMeasure+NoteBeat/CurNoteBeat
Nop ; Go to next measure if current one full
If NumBeatsMeasure=Beats
SendMessage "NEXT MEASURE"
Let NumBeats=Integer(NumBeats)
Let NumBeatsMeasure=0
EndIf
EndWhile
Nop ; Unlock the display, activate song window,
Nop ; update the display, and go to the first measure

```


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```

SendMessage "UNLOCKGUI"
SendMessage "UNLOCKDISPLAY"
SendMessage "WINDOW DOCUMENT ACTIVATE"
SendMessage "UPDATEDISPLAY"
SendMessage "POSITION SOP"
EndScript
EndObject
TextButton "Play"
Definition
  Origin 536,48
  Font "topaz",8 ; FontName, PointSize
  PrintStyle SHADOW,2,3 ; Style, Pen1, Pen2
  TextColors 1,0,NORMAL ; PenA, PenB, DrawMode
  Text " Play "
  Border BEVEL,2,1 ; BorderStyle, MainPen, ExtraPen
  Highlight COMPLEMENT
  ButtonFlags NONE
EndScript
OnRelease
  Nop ; Activate the song window and play song
  SendMessage "WINDOW DOCUMENT ACTIVATE"
  SendMessage "PLAY"
EndScript
EndObject
TextButton "Stop"
Definition
  Origin 536,72
  Font "topaz",8 ; FontName, PointSize
  PrintStyle SHADOW,2,3 ; Style, Pen1, Pen2
  TextColors 1,0,NORMAL ; PenA, PenB, DrawMode
  Text " Stop "
  Border BEVEL,2,1 ; BorderStyle, MainPen, ExtraPen
  Highlight COMPLEMENT
  ButtonFlags NONE
EndScript
OnRelease
  Nop ; Stop playing the song
  SendMessage "STOP"
EndScript
EndObject
ImageButton "BeatsLeft"
Definition
  Origin 110,60
  Image "RCF:CanDo2.51/Brushes/Left.br"
  Highlight COMPLEMENT
  ButtonFlags NONE
EndScript
OnClick
  Nop ; Change beats while pressing button
  Nop ; Do not allow value below 1
  Loop
    Let Beats=Max(Beats-1,1)

```

```

Do "ShowTime"
  Delay 0,0,10
  Until ObjectState("BeatsLeft")=OFF
EndScript
EndObject
ImageButton "BeatsRight"
Definition
  Origin 132,60
  Image "RCF:CanDo2.51/Brushes/Right.br"
  Highlight COMPLEMENT
  ButtonFlags NONE
EndScript
OnClick
  Nop ; Change beats while pressing button
  Nop ; Do not allow value above 16
  Loop
    Let Beats=Min(Beats+1,16)
    Do "ShowTime"
    Delay 0,0,10
    Until ObjectState("BeatsRight")=OFF
  EndScript
EndObject
ImageButton "NoteBeatLeft"
Definition
  Origin 110,72
  Image "RCF:CanDo2.51/Brushes/Left.br"
  Highlight COMPLEMENT
  ButtonFlags NONE
EndScript
OnClick
  Nop ; Change beats while pressing button
  Nop ; Do not allow value below 1
  Loop
    Let NoteBeat=Max(NoteBeat-2,1)
    Do "ShowTime"
    Delay 0,0,10
    Until ObjectState("NoteBeatLeft")=OFF
  EndScript
EndObject
ImageButton "NoteBeatRight"
Definition
  Origin 132,72
  Image "RCF:CanDo2.51/Brushes/Right.br"
  Highlight COMPLEMENT
  ButtonFlags NONE
EndScript
OnClick
  Nop ; Change beats while pressing button
  Nop ; Do not allow value above 64
  Loop
    Let NoteBeat=Min(NoteBeat*2,64)
    Do "ShowTime"
    Delay 0,0,10
    Until ObjectState("NoteBeatRight")=OFF
  EndScript
EndObject
* End of Card "DMCard"
*****

* Global routine "ShowKey"
Nop ; Set font and style
SetPrintFont "topaz",8
SetPrintStyle PLAIN,2,3
SetPen 1,0
SetDrawMode JAM2
Nop ; Erase current key in rollo button
PrintText " ",83,28
Nop ; Print the new key based on current index
PrintText KeyText[KeyTextIndex],83,28
* End of routine "ShowKey"
*****

* Global routine "ShowTime"
Nop ; Show the music staff brush
ShowBrush "ClippedBrush",79,61
Nop ; Set font and style
SetPrintFont "topaz",9
SetPrintStyle BOLD OUTLINE,2,3
SetPen 1,0
SetDrawMode JAM1
Nop ; Print the top and bottom number of time signature
Nop ; Note the different position if number is two digits
PrintText Beats,83-4*(Beats>=10),62
PrintText NoteBeat,83-4*(NoteBeat>=10),72
* End of routine "ShowTime"
*****

```

•AC•

Please Write to:
 Randy Finch
 c/o Amazing Computing
 P.O. Box 2140
 Fall River, MA 02722-2140

And furthermore...



Images by
Computer Cafe
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Inquiry #216

In mid-August the Computer Cafe and owners Jeff Barnes and David Ebner were selected to create a video for Oceanic, a leading scuba and watersport equipment company. The video was to be used as an opening sequence in Oceanic's videos. They didn't want much, just an underwater shot where a dolphin morphs into a diver using Oceanic's gear.

The Computer Cafe's first job was to dissuade the client from using stock footage. The problem was finding two shots that were alike in color, lighting, camera angle, and more. The task was nearly impossible and the result would be less than what the client hoped for. Their decision was made to create the entire sequence in the Amiga with LightWave.

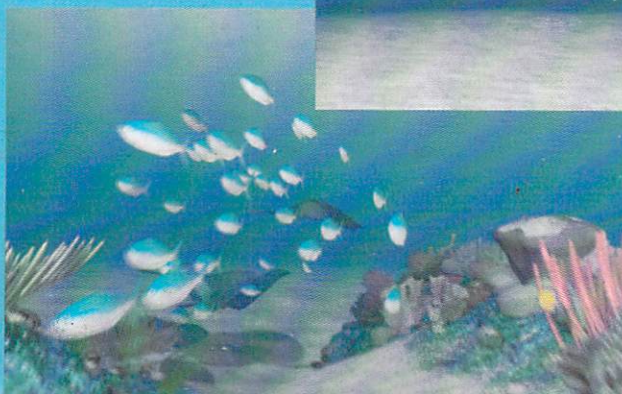
Tom Williamson created approximately 75% of the models based on actual Oceanic equipment. "I started with the equipment. Using LightWave Modeler I made everything for the diver to approximate scale, then using Tim Wilson's Humanoid as a base, the diver was assembled piece by piece." The dolphin was a modified Viewpoint object and the various fish, coral, rocks, and underwater scenery were created by the Computer Cafe team.

After a great deal of work and the utilization of Morph Plus and a variety of specialized utilities, the sequence was created. The viewer sees an open ocean floor, followed by a dolphin swimming in and morphing into a diver, who then turns in front of the camera and exhales. The bubbles then reveal a rippling Oceanic logo that soon bursts into a school of fish who swim off the screen.

The project used over 3200 individual rendered frames, 75 scene files, and 120 painted and scanned brushmaps. At one time, the designers were working with over 12 layers in order to get the characters exactly right.

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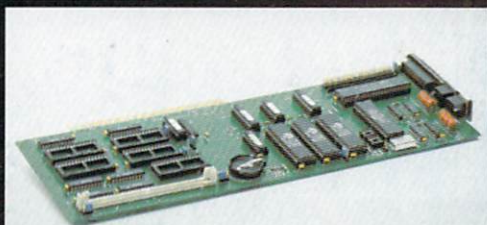
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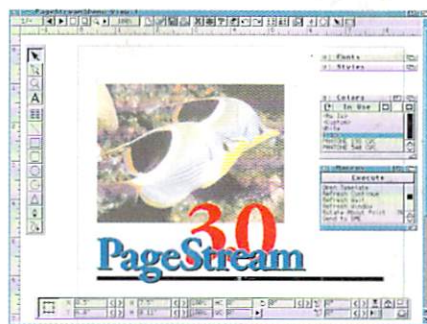
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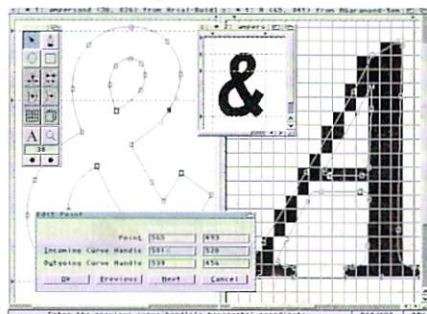
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